



Metrics and Mētis: work and practical knowledge in Agri-food sustainability governance

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Accepted: 5 August 2022 / Published online: 6 September 2022
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Abstract

In the mid twenty-tens, many major food companies committed to sustainably source their priority ingredients, including North American commodity crops. With deadlines set for the decade's end, companies joined multi-stakeholder initiatives and developed standards, metrics, and other assessment tools to help them track and drive progress. In short, they embarked on the sort of corporate supply chain governance that agri-food scholars have long studied. But how would this governance happen, especially in the commodity supply chains where companies knew and controlled little about upstream production? Treating supply chain governance as not just a corporate undertaking but also the work of mid-level sustainability managers, this paper examines the practical skills and knowledge, or *mētis*, employed by managers in their efforts to win the support of colleagues, farmers, and other supply chain actors. This analysis provides insight into how and why food companies' approaches to governing agricultural sustainability have changed since they set their 2020 sourcing goals. More broadly, it highlights the contingent nature of their governance.

Keywords Corporations · Sustainability · Supply chains · Practical knowledge

Introduction

In the mid twenty-tens, some of the world's biggest food companies announced big goals for supply chain sustainability. Identifying specific high priority raw materials, companies pledged that they would be entirely sustainably sourced by the decade's end. These priority ingredients included not only high-profile commodities such as palm oil, but also North American crops such as corn and wheat.¹ And while these goals covered a range of environmental concerns, from deforestation to greenhouse gas emissions to water use, most required knowledge and expertise companies had not previously needed. Partly for that reason, many

joined multi-stakeholder initiatives (MSIs), and partnered with other organizations. They also developed and adopted standards, metrics and other assessment tools, both to track progress towards their goals and to demonstrate that their governance of supply chain sustainability was credible and science-based.

Agri-food scholars began studying corporate supply chain governance well before sustainability became a primary objective (Dolan and Humphrey 2000; Dunn 2005; Konefal et al. 2005). As a result, we now know a great deal about the forums, tools and discursive practices involved. We know, for instance, how multi-stakeholder roundtables may grant only certain stakeholders a seat at the table (Cheyng 2011; Pesqueira and Glasbergen 2013); how corporations may push the costs of greening onto less powerful suppliers, fostering exploitation and exclusion (Ponte 2020), and how ostensibly science-based rules for setting and enforcing green standards may be highly political, inequitable, and ultimately ineffective (Fuchs et al. 2011; Elgert 2012; Hatanaka 2010; Dauvergne 2018). Yet we still know little about the people tasked with making corporate supply chains more sustainable – that is, the mid-level managers who develop and implement governance tools, participate in MSIs, and report on progress to internal and external audiences.

¹ See, for instance, Coca Cola 2013; Watson 2013 (on General Mills); Kellogg 2014; PepsiCo 2015. Unilever's Sustainable Living Plan, launched in 2010, also included a commitment (later revised) to sustainably source all agricultural raw materials sustainably (Unilever 2020).

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Researchers have hardly overlooked these individuals (henceforth corporate sustainability managers, or CSMs); on the contrary, they are sought-after sources of information about the organizations, industries, and supply chains they work within. But very little of the resulting scholarship says much about that work itself. This paper downscales the analysis. I examine food supply chain sustainability governance not just as a corporate undertaking, but also as a job that requires certain skills, knowledge, and sensibilities. With this analytical shift I make two arguments. First, while much scholarship examines the standards and other “science-based” tools used to legitimate, communicate, and coordinate supply chain sustainability governance (Bain et al. 2011), here I show that the uptake of such tools depends less on their epistemic authority than on CSMs’ ability to navigate a range of entirely unstandardized supply chain social situations, from farms to corporate headquarters. This ability in turn depends on CSMs’ own practical know-how, or *mētis*. Second, attention to CSMs’ work and workaday knowledge offers insights into how corporate supply chain governance strategies have evolved in recent years. If companies once relied on sustainability standards and metrics to “govern at a distance” (Miller and Rose 1990), they now promote specific on-farm practices through direct incentives and up-close personal relationships. While it is too soon to know how this shift in approach will play out, it reflects at least in part what CSMs have learned through their work. More broadly, it highlights the contingent, even experimental nature of the food industry’s governance of supply chain sustainability. Bottom-line business concerns may determine what companies seek from this governance, but not how or with what results they undertake it.

The paper draws on a long-term National Science Foundation-funded study of food industry initiatives to define, assess, and improve sustainability in commodity crop supply chains. For this study I conducted 52 in-depth interviews between 2014 and 2020, 38 of them with CSMs at major North American and European food brands and commodity trader/processor firms. Other interviewees included NGO representatives, MSI staff members, consultants, and academics. Throughout the study period I also conducted participant observation at the annual summits, committee meetings and other events held by food industry MSIs, with particular attention to the multi-stakeholder work of the US-based Field to Market.²

² I also conducted participant observation at events held by the Sustainability Consortium, the Sustainable Food Lab, and the Innovation Center for US Dairy. I obtained oral informed consent from all interviewees, and with the understanding that my use of interview data would protect interviewees’ confidentiality.

The technoscience and practice of supply chain governance

In *Seeing Like a State*, James Scott uses the Greek term *mētis* to describe the “practical skills and acquired intelligence” (Scott 1998, 296) with which people respond to changing and uncertain situations. It may seem an unlikely concept to describe the food industry’s sustainability governance. After all, Scott sees “the destruction of *mētis*...virtually inscribed in the activities of both the state and large-scale bureaucratic capitalism” (Scott 1998, 316). In its place, he argues, these institutions seek to organize productive activities around *techné*: scientific knowledge considered “impersonal, universal and completely impervious to context” (Scott 2020, 306). Scott is especially interested in how 20th century agronomic science simplified agriculture’s forms and functions by encouraging commodity monocultures over mixed farming, and maximum yields over qualities requiring more *mētis* to cultivate. The immense productivity of what Scott calls “scientific agriculture” provides the food industry with an abundance of cheap raw materials. It has also contributed to the environmental degradation that food industry sustainability governance now claims to address.

Here too *techné* comes into play. While rarely using Scott’s language, scholarship on agri-food governance has shown how “science based” tools enhance the state-like powers of multinational food companies. Whether such tools take the form of “best practice” sustainability standards or quantitative eco-efficiency metrics (i.e., emissions or energy use per bushel of crop), companies typically develop them in consultation with scientific experts, along with protocols to certify practices, verify data and otherwise check up on distant producers (Ransom et al. 2017; Freidberg 2014). Together these tools and standardized audit procedures serve, at least in principle, to legitimate and extend corporate governance, perform certain visions of sustainability (Loconto 2014; Hatanaka and Konefal 2017), normalize production practices that fit those visions (Gibbon et al. 2008), and makes those practices more legible to downstream companies (Bain et al. 2011).

Some research on technocratic (or “scientized”) agri-food governance emphasizes how it helps companies manage risk and improve brand image even as it subjects producers to higher costs and risks (Freidberg 2007; Ponte 2012, 2020). Other studies acknowledge the power behind corporate governance tools and procedures but highlight how producers circumvent it, for instance by negotiating certifications or fudging data (Hatanaka 2010; Arora et al. 2013). These findings resonate with Scott’s observation that the rigid application of *techné* – whether to urban planning, rural development projects or, in this case, supply chain governance – tends not to destroy *mētis* so much as redirect

it toward new objectives. More generally, this research calls attention to the “local realities” of food industry governance (Ouma 2010), i.e. what happens when certifiers show up on the farm.

But how does governance even reach that point? After all, it is one thing for a company to set sustainability goals, another to develop tools to meet those goals, and yet another to see those tools put into action, effectively or otherwise (Loconto and Demortain 2017). These steps may be relatively straightforward for the large supermarket and fast-food chains that source directly from producers and control enough of the market to make compliance with their “voluntary” standards a condition for doing business (Fulponi 2006; Harvey 2007). But even in these relatively short, tightly controlled supply chains, a company’s ability to govern upstream production practices – whether in the interests of sustainability, food safety, or any other desired outcome – depends on the cooperation of many different actors both within and beyond company walls. This paper focuses on more complex commodity supply chains, where food manufacturers source most of their staple ingredients from intermediary trader/processor firms. With traditionally little control over or even knowledge about the production of their raw materials, manufacturers’ ability to govern that production is far from assured. Rather, it must be achieved. This is one of CSMs’ primary responsibilities.

The question of how CSMs carry out this responsibility has received little attention in the agri-food governance literature. This may partly reflect their relative inaccessibility, at least compared to the annual reports, standards and other published materials more commonly used to analyze corporate governance. However even studies that appear to draw on CSMs’ accounts (they are not always identified as such) tend to treat them more as spokespeople for their companies and industries than as agents of governance (Higgins et al. 2015; Tallontire et al. 2011). CSMs’ relative invisibility, then, may also reflect a broader tendency within agri-food studies and related social sciences to conceive of corporations as unitary if not necessarily unified (though see Welker et al. 2011; Sharpe and Barling 2019; Penders 2011).

One exception is the management studies research on CSMs. This literature treats them not as company spokespeople but rather as “change agents” tasked with helping their companies respond to new societal, regulatory and environmental pressures (Visser and Crane 2010; Schein 2017; Tang et al. 2011; Williams et al. 2021). Some of this research shares with corporate anthropology an interest in managers’ motives, identities (i.e., as “activists in a suit”; Carollo and Guerci 2018) and methods for coping with on-the-job frustrations (Allen et al. 2015; Wright et al. 2012; Dolan et al. 2021; Rajak 2011a). Another line of inquiry examines CSMs’ strategies for internal “issue selling”

(Wickert and de Bakker 2018; Hunoldt et al. 2020), a crucial skill since they rarely hold authority over the operations they are trying to change, such as procurement. And this skill goes beyond an ability to make the “business case” for sustainability, though this certainly matters. They also need an appreciation for their companies’ different subcultures, empathy for those who work in them and, not least, an ability to make others care about a particular cause as much as they do (Kok et al. 2019; Dutton et al. 2001; Wright and Nyberg 2012).

This research indicates that a good part of CSMs’ work takes place inside their own companies, where they must win support from colleagues and executives. But the management studies scholarship says little about CSMs’ work in other supply chain settings, where they may need different knowledge and skills. More broadly, because it tends to focus more on the levers of organizational change than the objectives, and more on strategies for issue-selling than the issues, this scholarship provides limited insight into what sustainability work entails in specific industries (although some authors do note that the specifics matter (Williams et al. 2021)). Exactly what practices or outcomes CSMs seek to change and where, whose support they must enlist and how – these questions typically go unasked. Instead, sustainability appears as a generic and aspatial goal. For food industry CSMs, however, it is anything but that. Even if the crops of concern are commodities – generic by definition – and even if measures of their sustainability are, like other forms of *techné*, “completely impervious to context” (Scott 1998, 396), CSMs’ work to implement those measures requires close attention to variability and site-specificity.

In other words, it requires *mētis*. While not a term often used in reference to managerial knowledge (though see Baumard 1999), *mētis* plays a well-recognized role in statecraft and planning (Campbell 2015; Kumar 2021). Even in *Seeing Like a State*, a book largely about failed state plans, Scott draws on Lindblom’s notion of “the science of muddling through” to describe how policymakers and planners negotiate complex problems (Lindblom 1959; Scott 1998, 309–10). For CSMs, the *mētis* employed to “muddle through” is not necessarily localized, like that of the smallholder farmer, but it is experiential and contextual. It draws on their experiences promoting sustainable sourcing practices in varied relationships and supply chain sites, from corporate headquarters to farmers’ fields. Their *mētis* is also strategic, in that it guides not only their technical approaches to problems but also how they mobilize support for those approaches. Indeed, this support arguably matters more than technical know-how given that CSMs, like many mid-level members of large hierarchical institutions, command neither the authority nor the material resources needed to achieve much singlehandedly. And because they

are expected to help their companies meet quite specific goals and deadlines, CSMs' *mētis* is necessarily focused on making concrete progress, which often requires revising and piecing together a "bricolage" of strategies (Scott 1998, 306).

Lastly, this *mētis* is a form of "partisan" knowledge, in that CSMs are often personally invested in the outcomes (Scott 1998, 300). On one hand, as salaried employees they clearly do not survive off their practical know-how in the same way as do smallholders and sailors. On another, they do depend on it to achieve what one CSM called "the wins to keep you going" – in other words, the signs of progress that make the work of managing supply chain sustainability seem worthwhile. In this sense their job is arguably incompatible with the "ethic of detachment" that Cross (2011) sees afforded by auditing and other supply chain governance practices.

To be clear: the intent here is not to reify CSMs' *mētis* or celebrate its effectiveness. As I show below, the CSMs who assumed responsibility for their companies' 2020 sustainable sourcing goals did not start with much experiential knowledge. Nor did acquiring more experience necessarily translate into major "wins" in their work to meet those goals. But examining how CSMs acquire and apply *mētis* does help us to see food supply chain governance as a set of concrete practices and relationships, rather than (as it often portrayed) simply the deployment of corporate power via standards, metrics and audits (Fuchs et al. 2009; Beer 2016; Hale et al. 2019; Rosin et al. 2017). This analysis also illuminates how and why this governance has changed in recent years.

The corporate project of sustainable sourcing

Management-level sustainability positions are relatively new in the mainstream food industry, and those in "sustainable sourcing" newer still. While corporate social responsibility (CSR) departments date back to the late 20th century, few companies employed supply chain sustainability managers before the late 2000s. And while the two terms are sometimes used interchangeably (Sheehy and Farneti 2021), CSR and corporate sustainability require different types of managerial work. Welker (2014) describes CSR in the mining industry as an "ameliorative discipline," aimed at mitigating the environmental and social harms that can in turn threaten companies' license to operate. Managing CSR for a company thus entails keeping it compliant with national laws and industry norms, untainted by scandal, and on peaceable terms with local communities and other key stakeholders – terms often secured through philanthropy

(Rajak 2011a). By contrast, supply chain sustainability in the food industry has come to be framed as a "journey" toward ever greater eco-efficiency and prosperity, fueled as much by innovation as obligation. It is expected to not only reduce reputational and environmental risks, but also generate "win-wins" across the supply chain (Dauvergne and Lister 2012). For at least some CSMs, sustainability's more anticipatory and enterprising orientation is what makes their work exciting. But it also makes for a job where, as one put it, "there is no playbook."

Instead, CSMs hired in the early 2010s recall that executives looked to them to determine what sustainability would mean for their companies. This was no small task given that they often started their jobs with no formal training or prior experience as sustainability managers. Roughly half of the CSMs I interviewed were internal hires who had previously worked in very different capacities. For instance, Tom (all names are pseudonyms) was working in a commodity trading firm's finance department when the company tapped him for a new director-level position in sustainability. "No one was really sure what it was," he said, but senior executives wanted him to start by determining whether food brands' growing interest in sustainable sourcing represented a threat or opportunity. Julie, hired as a food brand CSM after a brief stint in the public sector, said "I was definitely the first person with any agricultural sustainability background at all – though mine is tenuous. I do not claim to be an expert." Lisa was hired by a commodity trading firm to handle greenhouse gas (GHG) emissions accounting, then found herself taking on a much more broadly defined role as a CSM. "They actually created the position and moved me over before they even knew what the position was going to be or who I was reporting to... When my boss started as a CSO [Chief Sustainability Officer] ... he said, "Okay, teach me on sustainability. What do we need to be doing?"

At the least, companies needed to learn about upstream production processes. They needed this knowledge both to respond to external queries – whether coming from NGOs, shareholders or downstream customers (i.e. retailers such as Walmart) – and to set and track progress toward sustainable sourcing commitments. These queries and commitments reflected the rise of three ideas that together shaped the food industry's pursuit of supply chain sustainability, and by extension CSMs' responsibilities.

The first idea held that sustainability was an appropriate realm for setting what the business world called "big hairy audacious goals" (BHAGs). In their bestselling *Built to Last*, Collins and Porras (1997) recommended corporate BHAGs as means to stimulate internal innovation and cooperation. An effective BHAG, they said, "is clear and compelling and serves as a unifying focal point of effort—often creating immense team spirit" (Collins and Porras 1997, 124).

By design, companies set BHAGs in advance of clear paths to meet them. Several major food manufacturers – among them Unilever, PepsiCo, General Mills, Kellogg, and Coca Cola – pledged to sustainably source key raw materials by 2020 even when they knew little about how or even where those crops were produced, much less what it would take to sustainably source them. Some of the biggest commodity traders, similarly, pledged to eradicate deforestation in supply chains where the very nature of commodity trading made traceability difficult if not impossible (Waldman and Kerr 2014; Freidberg 2017).

The second idea, well-supported by life cycle assessment (LCA) studies, held that companies' sustainability goals needed to target agriculture because it was the most environmentally impactful stage of most foods' farm-to-market life cycles (Mogensen et al. 2011; Weber and Matthews 2008). By extension, it was also the stage offering the greatest opportunities to cut costs through more efficient input use. In other words, sustainable sourcing goals could in principle help with not only brand image and long-term supply security, but also product competitiveness. Some companies, notably Walmart, pitched their supply chain sustainability targets explicitly as means to save consumers money (Freidberg 2014).

The third idea, often expressed with reference to the business idiom “what gets measured gets managed,” presumed that the very process of assessing on-farm environmental impacts would drive their reduction (Topping 2012). Carried out via surveys and various measurement platforms, this process was supposed to work as a form of informational governance (Mol 2006, 2013). Besides sending a “market signal,” it would in theory generate the information farmers needed to become more sustainable. An important corollary to this idea was the assumption that more sustainable practices would pay off for farmers (i.e. by reducing input costs and/or increasing yields), thus motivating ongoing progress. This assumption in turn provided a rationale for companies to define “sustainably sourced” as coming from farms that demonstrated (through assessment) continuous improvement.

CSMs would later come to doubt the assumptions wrapped up in this third idea. But for several years it enjoyed wide acceptance, perhaps in part because it described how sustainable sourcing might happen. However audacious companies' goals, it made them seem potentially achievable. All three ideas – that setting such goals would benefit companies, that they should focus on agriculture and other upstream production processes, and that assessment would drive improvement -- also led companies into the multi-stakeholder initiatives (MSIs) that were building the basic infrastructure of agricultural sustainability assessment. Comprised of tools, guidance, and pre-competitive

“partnerships” between and among companies and other stakeholders, this infrastructure was especially important to the sustainable sourcing work of the food brands that had not traditionally sourced directly from farmers, and therefore neither knew nor controlled much about on-farm practices.

Although some of the largest brands took part in several MSIs, here I focus on their participation in Field to Market, an MSI founded to promote the sustainability of U.S. commodity crops. In the early 2010s Field to Market's membership (comprised of food brands, retailers, commodity trader/processors, agri-tech suppliers, growers associations, and an assortment of NGOs and universities) developed the organizational structure and tools that many companies subsequently used to pursue their sustainable sourcing goals. For example, a food brand with a sustainably sourced wheat goal could co-sponsor a “Fieldprint Project” with one of its wheat suppliers (typically a commodity trader), enroll farmers from the supplier's “millshed” in that project, and then use Field to Market's Fieldprint Calculator to collect and assess the farmers' anonymized data against several sustainability metrics.³ Some projects focused on specific objectives, such as reduced nitrogen runoff. But many simply asked farmers to use the calculator (originally a spreadsheet survey, later an online platform) to share their data annually, so that the sponsoring companies could track the expected eco-efficiency improvements over time. To ensure credibility, Field to Market subjected its metrics to peer review and public comment, and established rules governing the public claims companies could make about their Fieldprint projects. Any claims about quantitative improvements, such as reduced GHG emissions per bushel of crop, required at least five years of data.

I return to CSMs' accounts of their work with the farmers enrolled in Fieldprint projects and related sustainable sourcing initiatives. For now, two points about such initiatives matter. First, although they established the infrastructure needed to govern on-farm sustainability, they did not by themselves make it happen. That is, they created tools of governance and the channels for applying them, but did not automatically make those tools effective. Second, such projects brought downstream companies' CSMs into relationships with farmers as well as the various colleagues and supply chain intermediaries whose cooperation they needed. Through these relationships, CSMs gained not just technical knowledge about agricultural sustainability – at least as defined in terms of improved eco-efficiency – but also experience promoting it in diverse places and social situations. In other words, they acquired mētis. CSMs' accounts of

³ The Field to Market metrics include GHG emissions, energy use, irrigation water use, land use (all per bushel of crop produced), soil carbon, soil conservation and biodiversity (<https://fieldtomarket.org/our-programs/sustainability-metrics/>).

their work in these different contexts helps to illuminate the role of experiential knowledge in making supply chain sustainability governance happen, albeit not always as planned.

The manager's *métis*, part I: Learning (and enrolling) the organization

Corporations commonly describe sustainability as part of their company "DNA," i.e., integral to everything they do. Food and agribusiness companies especially emphasize how their reliance on land, water and other natural resources makes sustaining those resources a core business priority (Farnworth and Brackley 2022). But even director-level CSMs typically do not exercise direct authority over core business activities. Nor do their budgets allow them much unilateral action in pursuit of their companies' sustainability goals. As Joe, a CSM for a mid-sized brand put it, "I cannot just go out and do projects. I have to convince others that there are projects worth doing." These "others" include not just top executives but also – and potentially more challenging – the teams that handle a company's day-to-day operations. Among the most important are those involved in sourcing, such as food brands' procurement teams (also called buyers) and commodity traders' origination teams (who may also be called buyers or traders, depending on the supply chain). They have the upstream contacts, knowledge, and influence that CSMs need. But given their broadly defined job responsibilities, CSMs typically also need at least the occasional support of people across their organization, from the marketing and legal teams to the finance department.

Especially for externally-hired CSMs, then, one of the first tasks is to learn who does what, and under what conditions. For Gemma, who had previously worked as a CSM in a different industry, this proved harder than determining which environmental concerns her new employer (a commodity trading firm) would likely need to address. "That was the easy part – it was the organization that I had to learn." Besides meeting with any colleague who showed "even just a little bit of interest" in explaining their work to her, "I've gone to quite a few facilities and whenever I show up a guy will take me on these great tours...I'm a very visual learner." Nan, similarly, said she spent her first year as a CSM for a large commodity trader learning about not only the company's supply chains and markets but also its employees' varied roles and concerns. "The first conversation – it sounds very simple – but it's really just starting to understand the people on that team, what their day-to-day looks like, what they're incentivized to do, what pressures they're under."

Learning the organization also means coming to understand its corporate culture and how to navigate it most effectively (Dutton et al. 2001). "I'm not a very political person," said Nan, but she had learned that winning support for an initiative often requires advance lobbying; "you have to have meetings before the meeting." It also helps to identify knowledgeable allies. Gemma described one such colleague: "I talk with her quite a bit just to get different ideas on how to approach subjects or who to talk to or how to talk to them about it... Also, she is very, very supportive of the whole sustainability thing, she gets it."

Whatever CSMs' own histories with their companies, they emphasized the importance of knowing how to mediate between different parties, especially in response to external requests. A downstream customer, for instance, might want help certifying the traceability of a particular raw material, or collecting data about its production. In those situations, explained Wendy (a commodity trader CSM) the first step "is to translate what is wanted on the demand side of things, and then start that discussion with our commercial counterparts [buyers]. What is practical? Who would be a good supplier to approach with this?" She added that customers' initial demands are often *not* practical; "everyone wants sustainability. No one is prepared to pay for it." Reconciling their requests with what the supply chain can deliver "is not something that junior people are doing; it is very strategic."

CSMs also tap their communication skills to mobilize internal support for their own work. Financially, they need their companies to cover expenses such as MSI membership fees, travel to sourcing regions, events to recruit farmers into sustainability projects, and incentives to retain them (I say more about these later). CSMs learn to tailor the "business case" for such outlays to the audience. Lisa said her company's top executives are relatively receptive, because from their "30,000-foot view" they can appreciate how her work helps the company manage risk as well as shareholder inquiries. By contrast, the mid-level managers in sourcing "take a lot more convincing, because they're the ones on the line to make the profit model work." Trained and incentivized to procure commodities as cheaply as possible, "it takes some creative thinking" to win them over.

In addition to financial support, CSMs' progress in their own work depends on colleagues changing how they do theirs. What CSMs call change management (Doppelt 2010) is "one of the most complex parts of the sustainability role," said Delilah, a food brand CSM, partly because it requires understanding many other roles and partly, again, because CSMs cannot demand that others change. Depending on her audience, Delilah said, "I have to put on different hats, different shoes. You really have to do what we call 'enroll.'" Marketing people, for instance, must be convinced to use their own skills to educate consumers about the company's

sustainable sourcing work. Procurement teams must be convinced to use conversations with suppliers (i.e., commodity trading firms) not just to negotiate prices and timeframes, but also to request cooperation with their companies' sustainable sourcing goals. As Julie explained, such requests needed to come from them so that suppliers could see "that this is a real ask, it is not just coming from the sustainability team over in the corner."

For their part, the commodity firms' CSMs must enroll colleagues in the fulfillment of such requests. In their international supply chains, this often means convincing the trading teams to start asking their own suppliers more questions about, for instance, their commodities' traceability and certification status. In the U.S., it has often meant recruiting colleagues to help launch and run Fieldprint projects. For these, Lisa turns to the "boots-on-the-ground" teams, such as the company agronomists and grain elevator staffers who interact regularly with farmers. People in these positions do not necessarily have any training in sustainability, much less interest in talking about it with farmers. "In conversations you can kind of tell who's onboard," said Lisa. But those who are onboard are "our best assets," due to their rapport with farmers and their willingness to undertake work well beyond their official responsibilities. She described one such colleague who recruited farmers for Fieldprint projects and then helped them enter data into the Fieldprint Calculator. "They sit at the kitchen table and have breakfast and then they're entering data and then they have lunch and they're entering data. It's a whole-day event sometimes." At another commodity firm, Gemma similarly said that collecting Fieldprint data was "definitely an add-on" for the employees doing it. "Nowhere in their job description does it say to do this."

An important part of CSMs' mētis, then, is knowing not only how to make the business case for a particular sustainable sourcing initiative, but also how to identify and cultivate colleagues' readiness to support it for reasons irreducible to the business case. Sometimes, Lisa said, sheer persistence works. "I hate to say it, but it's a lot of 'squeaky wheel gets the grease' kind of thing. It's convincing them that this isn't going away. I'm not going away." At least as important in relations with colleagues is what CSMs call an ability "to meet them where they are," which they describe in terms of empathy and flexibility. Nan said this took a few years to learn. "Early on in my career, I made assumptions about how people would react to sustainability, and I realized I'm actually more often wrong than I'm right." She mentioned assuming that older employees would be less interested, "whereas people my age are already pretty bought in." Instead, she found that for "a lot of the older generation, at least at [Company X], sustainability is very legacy building work... And that's something to really lean

into." Alice, a retailer CSM, said that to negotiate effectively it helped to "give yourself experiences that will give you empathy" for others' perspectives. "It is not necessarily that you have to agree with them. Some of them you may think are completely bogus. But at least you understand where they are coming from."

In their accounts of how they enroll colleagues in the pursuit of sustainable sourcing, food industry CSMs describe strategies and skills well-documented, at least in generic form, in the management studies literature on change agents and issue-selling (Tang et al. 2011; Wickert and de Bakker 2018). By contrast, such accounts rarely appear in agri-food scholars' analyses of corporate sustainability governance, which tend to focus on firm-level power relations, tactics and agendas (Bain et al. 2011; Dallas et al. 2019). The two perspectives are not at odds. Rather, CSMs describe day-to-day work that is both constrained by their firms' business priorities – thus their limited budgets and reliance on colleagues' "add-on" labor – and essential to the deployment of their firms' standards, metrics, and other supply chain governance tools. And while much of the work of building support for sustainable sourcing takes place in corporate settings, the ultimate aim is to win over actors at the source, i.e. farmers. The rest of this paper describes CSMs' efforts to do so, and how the knowledge acquired through this work has fed into larger changes in corporate strategies for governing supply chain sustainability.

The manager's mētis, part II: Fieldwork

Whether they hold director-level positions or manage only a subset of their companies' sustainable sourcing goals, nearly all the CSMs I interviewed interact at least occasionally with farmers, and for some "farmer engagement" is a core job responsibility. Dave, a food brand CSM, said he spent several weeks a year traveling "to origin" – that is, the various North American regions where his company's commodity ingredients originate. In partnership with the commodity trading firms that supply those ingredients, Dave's company began recruiting farmers into Fieldprint projects in the early 2010s as part of its commitments to sustainable sourcing. The company relied on a variety of "boots on the ground" personnel to help with farmer data collection. But Dave, like his peers at other companies, organized and attended farmer recruitment events, as well as workshops for those already enrolled. He also visited some project participants' farms.

For CSMs, farmer engagement serves multiple purposes beyond recruitment. First, it provides opportunities to gain the "acquired intelligence" that, as part of their mētis (Scott 1998, 296), helps them do their job. In other words, just as

CSMs must “learn the organization” before they can win colleagues’ support for their companies’ sustainable sourcing goals, so must they learn about farming – or at least, those aspects that might affect farmers’ participation in company-sponsored sustainability projects – in the targeted sourcing regions. Exactly what CSMs seek to learn varies and has evolved somewhat over time, as I discuss later. Consistently, however, the value of this knowledge lies in how it aids their interactions with not only farmers, but also other supply chain actors. Gemma, as a commodity trading firm CSM, regularly discusses her company’s sustainable agriculture initiatives with colleagues and customers. The opportunity to gain first-hand authority is one reason why she travels “to origin” both in the US Midwest and overseas. Referring to an upcoming trip, she said, “A lot of it is to build my credibility, to say, ‘Hey, I’ve been there.’”

Second, CSMs attend farmer engagement events, often alongside “boots-on-the-ground” technical staff, to express appreciation on the part of their companies – appreciation that they hope will encourage farmers to join and stay in projects. As Dave explained, most commodity growers do not know where their crops end up. Rarely do they know anyone at the branded food companies that now want their cooperation in sustainable sourcing initiatives. So CSMs need to forge those connections. “It is pretty cool for the farmers to have [Company X] show up and talk about how they are an absolutely critical step in our supply chain... Or to bring up a sampling of [Company X’s] boxed products... It is kind of fun for them to see that and they do not get to do that every day. The dots are not connected every day. It is powerful for them to hear why we care.”

In addition to the mayonnaise, breakfast cereals or brownie mix they might hand out at meetings with Fieldprint project farmers, CSMs brought data. At least initially, farmers seemed to appreciate the graphical presentations showing how they performed on different Fieldprint metrics relative to regional benchmarks. Roger, a commodity trader CSM, said that such presentations would ideally both compensate and incentivize project farmers. To see what sort of efficiencies were possible and profitable would encourage improvement. “That is at least the theory,” he said.

In practice, even enrolling farmers in Fieldprint projects was not easy. Many saw no reason to share data with companies that wanted evidence of ever-improving sustainability but did not expect to pay for it. Dave acknowledged that his own company’s sustainable sourcing goals asked a lot of farmers and that he would never be able to “fully compensate” those who cooperated. But this was yet another reason to attend farmer engagement events: to learn what might *keep* them engaged for the five or more years that projects typically ran. He had already found that data slide-shows were not enough, even for the farmers initially most

interested in this information. After a couple of years, “the sheen kind of wears off.” He listed a few alternative incentives, such as free subscriptions to popular farm management software. But like other CSMs who dealt regularly with farmers, he had come to appreciate that “not all producers are going to value the same thing in the same way,” so it was his job to determine what they did value, and then try to mobilize the necessary company resources.

With more experience, CSMs grew more confident about their relations with farmers, but also more ambivalent about the data collected from them. They expressed doubts about whether it would ever permit their companies to claim that their Fieldprint projects were driving measurable improvements in on-farm sustainability. CSMs could recount plenty of anecdotes of individual farmers who found the Fieldprint calculator useful for tracking the effects of their conservation practices. But several years of project data did not show evidence of broader trends; it did not show that project farmers as a group had adopted any new practices besides inputting data into the calculator. Increasingly, CSMs questioned the very premise of informational governance that had once made companies’ “audacious” sustainability goals seem achievable, namely that assessing farmers’ eco-efficiency would by itself drive improvement. Reflecting back on this idea, one Field to Market staff member admitted that “You can’t just collect data and expect impact. It seems obvious.”

Reassessing assessment

Compared to how publicly food companies committed to sustainable sourcing goals in the 2010s, their 2020 deadlines passed in the early days of the coronavirus pandemic, and with little fanfare. But the status of the goals usually received some mention in companies’ annual sustainability reports. These showed that while some companies missed their targets for certain specialty crops (Coca Cola came nowhere near meeting its goal of 100% sustainably sourced mangoes) those that set goals for US commodity crops, such as Unilever, General Mills and Kellogg, largely achieved them.⁴ However “sustainably sourced” for these crops now meant they came from regions where farmers were “driving towards continuous improvement” by using the Fieldprint calculator or similar platforms to collect and share data on at least 25% of their acreage. It did not mean that the aggregate data from those regions *showed* improvement, whether in the form of reduced emissions, better water quality, or any

⁴ For Coca Cola: <https://www.coca-colacompany.com/sustainable-business/sustainable-agriculture>; for Kellogg’s: <https://crreport.kelloggcompany.com/responsible-sourcing-ingredients>; for General Mills: <https://www.generalmills.com/en/Responsibility/Sustainability/sustainable-sourcing>.

other measure of on-farm sustainability. As CSMs themselves had acknowledged, it did not.

Meanwhile, food companies lost little time announcing new goals. Once again, they specified quantities and deadlines: the removal of 50 thousand tons of GHG from the North American rice supply chain by 2025 (Kellogg); a million acres converted to regenerative agriculture by 2030 (General Mills); the achievement of “net zero” emissions by 2040 (PepsiCo) (Wilcox 2021; Coyne 2022). Once again, they emphasized the necessary ambitiousness of these goals, the science behind them, and the collaborations that would help to achieve them. Given the parallels, it would be easy to conclude that setting such goals has become simply an ongoing performance of corporate virtue (Rajak 2011b) in which the well-played *pursuit* of sustainability (one that is collaborative, science-based, transparent, etc.) makes even the most modest achievements count as progress on the “journey” (Milne et al. 2006). After all, the companies that set 2020 sustainable sourcing goals for US commodity crops ended up with only anecdotal evidence that those goals had any farm-level effects, beyond getting more farmers to collect and share data. But by defining (or rather redefining) their goals around that accomplishment, they were able to report success.⁵

Critical agri-food scholars have long recognized this kind of discursive framing as an important dimension of corporate food power, and one that can both enhance and draw strength from companies’ market and regulatory power (Clapp and Fuchs 2009). If companies now word their sustainability claims more cautiously than they once did, their tendency to frame problems, solutions, and progress to suit their own business interests has not changed much over time.

But to end with that familiar observation would be to overlook what changes *did* occur, and why, over the several years that food companies pursued their 2020 sourcing goals. At least three stand out. First, even if companies’ anecdotal evidence of improved farm stewardship says nothing about broader trends, it represents a new form of corporate knowledge production, carried out through new supply chain relationships. Food brands have not traditionally sent employees to meet upstream commodity crop producers. They might have maintained direct and lasting relationships with specialty crop producers, mainly to assure consistent supply and quality standards. But they did not need to know where the crops that went into their wheat

flour and corn syrup came from, much less who grew those crops and under what conditions. Now they do need this knowledge, as well as the relationships needed to produce it. To some extent the same applies to commodity trading firms. Although some of their field-based employees have long interacted directly with farmers, traditionally they did not need to know much about *how* they farmed, except insofar as it affected yields or input purchases. And whatever knowledge they possessed did not need to travel back to headquarters, much less down the supply chain. Now CSMs seek to enlist these field-based colleagues in their own sustainable sourcing work, both for who they know and what they can help to find out.

Second, CSMs’ ideas about the knowledge needed for this work – the “acquired intelligence” part of their *mētis* – have evolved in response to both accumulated experience and new information. Industry events sponsored by Field to Market and other MSIs offer one source of insight into this evolution. In the early to mid-2010s, attendees at these events were preoccupied with questions of farm-level data: how to use it to assess sustainability, how to improve its “flow” between different platforms and, above all, how to overcome farmers’ reluctance to share it. Sessions provided tips for winning farmers’ cooperation and previewed supposedly more user-friendly assessment tools. At the time few questioned the value of collecting farmers’ data, even in private conversations. For CSMs, the main challenge was to convince farmers of that value.

By the decade’s end, the focus of both organized sessions and informal discussions at such events had shifted. Although questions about farm data had not been resolved (if anything, the goals companies set in 2020 renewed them) CSMs’ declining confidence in data collection as a driver of change led them to ask what – or often who – could be more impactful. At a 2020 Field to Market virtual event Becca, a food brand CSM, told the audience that her company got results by putting “skin in the game.” More specifically, it offered to cost-share farmers’ transition to cover cropping. But with limited funding for such programs, “we really want to have as much money as possible go to the farmers and not let perfect be the enemy of the good,” she said, which meant a “minimalist approach to data collection and validation.” Nicole, another food brand CSM on the same panel, said that her company had also changed its approach. Rather than only gather quantitative data, she observed how farmers themselves evaluated qualities such as soil health, which they might do by sight or touch. “Not always looking at the metrics,” she said, helped her better appreciate what forms of evidence mattered to farmers. For similar reasons, she also gathered intelligence on potential local partners. “Who do the farmers trust? That’s really what you’ve got to look for - who are farmers already turning to? Who

⁵ When General Mills announced its goals in 2013, it said that 100% of its supply of U.S. wheat, corn and oats “will be sourced from growing regions that demonstrate continuous improvement against the Field-to-Market framework or comparable environmental metrics” (https://www.generalmills.com/en/News/NewsReleases/Library/2013/September/sourcing_10). It later replaced “demonstrate” with “driving toward.”

is that trusted adviser within the community?” She now worked closely with one such adviser, a regional farmers’ association agronomist who promoted cover crop adoption via farmer-to-farmer support networks. Nicole described how the agronomist organized pizza and beer evenings during which a farmer in her company’s cover crop cost-sharing program would host several others. At least until the COVID-19 pandemic put such gatherings on hold, “the program sold itself...the farmers would just start talking to one another.”

Farmer-adviser trust relations and farmer-to-farmer learning are both longtime scholarly concerns, especially as they relate to the dissemination of agroecology and soil conservation practices (Ingram 2008; Schneider et al. 2009; McCune and Sánchez 2019; Mills et al. 2019). That CSMs for some of the world’s biggest food companies now share these concerns reflects a growing corporate interest in what Nicole called “the social side” of agricultural sustainability governance – that is, the social drivers of behavioral change. Responding to this interest, in late 2020 Field to Market held a virtual members-only event on “The Human Element: What Social Science Can Teach Us About Building Effective Sustainability Strategies for U.S. Agriculture.” On one panel, invited social scientists shared their research on farmer decision-making while calling for more research on “what interventions really work.” On another, CSMs shared their own thoughts on what worked. Besides partnering with trustworthy local experts, as Nicole had recommended, they emphasized the value of adaptability and attentiveness. As one panelist put it, “there needs to be a culture of learning rather than a culture of knowing.” Again, this is hardly a new idea in either the corporate world or the scholarship on “knowledgeable capitalism” (Thrift 2005; Hughes 2007). In this context, however, CSMs were calling for not formal training in auditing and other at-a-distance supply chain governance techniques (Hughes 2006), but rather learning from farmers and other actors whose support they needed. Put somewhat differently, they were talking about the need for governance guided by not just “science-based” sustainability metrics, but also *mētis*.

CSMs’ own accounts have already hinted at the last major change. When food companies first pledged to sustainably source their commodity ingredients, the idea that assessment would reward farmers with valuable information helped to justify not offering them additional compensation. Thus CSMs showed up at farmer engagement events with little more than free food samples, data slide-shows, and assurances that sustainability would eventually pay for itself. Now companies’ regenerative agriculture projects woo farmers with an array of monetary incentives (cost-sharing, payments for practices adopted or outcomes achieved, access to public sector funds) as well as

agronomic and technical support ((Thompson et al. 2021; Chute et al. 2022).

The carbon sequestration potential of certain regenerative practices, such as cover cropping and no-till (Poeplau and Don 2015), is a primary reason why companies will now pay farmers to adopt them. Having set ambitious GHG emission reduction targets, they are counting on the carbon “insets” generated by farmers in their supply chains (Thompson et al. 2021) to help meet those targets. In other words, the incentives reflect a changing corporate calculus at a time of growing pressures to address climate change. But they also reflect what CSMs have learned through their work. To anyone familiar with the costs and risks that accompany transitions to practices such as cover cropping (Carlisle 2016; Roesch-McNally et al. 2017) it might seem obvious why companies would need to compensate farmers rather than assume assessment alone would nudge them in a more sustainable direction. But that is the point: until quite recently, downstream food companies were *not* familiar with those potential barriers to adoption. They knew little about farming livelihoods in their commodity supply chains. With more knowledge came more appreciation for what incentives their sustainability projects needed to offer if they were to have any chance of winning farmers’ cooperation. The acquired intelligence and practical skills that CSMs needed for their own work – their *mētis* – helped to bring about this broader change in corporate food supply chain sustainability governance.

Conclusion

It is too soon to know whether these changes in governance approaches will prove more effective, in the sense of convincing more farmers to adopt the regenerative, “climate smart” practices that food companies now want to see. But already they point in at least two directions for further inquiry. The first centers on companies’ current preoccupation with not only incentivizing the widespread uptake of certain on-farm practices, but also financing the incentives in a cost-effective manner. Field to Market formed an “innovative finance” working group in 2021 to address just this concern. A subsequent report detailed several strategies for supporting farmers, ranging from the expansion of voluntary “pay for performance” watershed protection programs (in which farmers are paid for reduced nutrient runoff) to longer-horizon scenarios for large-scale sustainable agriculture projects funded by a mix of public, philanthropic and private capital (also known as “blended finance”) (Monast and Hickman 2022). If at a certain level these strategies exemplify well-documented processes of agri-food neoliberalization and financialization (Konefal 2013; Isakson

2014; Clapp 2014; Clapp and Isakson 2021), understanding their prospects and effects still requires, like the supply chain governance processes examined in this paper, close attention to the specific actors, relationships, knowledge and likely frictions involved.

Also worth further inquiry is the question of how food companies' changing approaches to governing on-farm sustainability may be driving larger changes in commodity crop supply chains. Much about the workings of supply chains for crops such as U.S. corn and wheat hinges on their fungibility – that is, their presumed sameness regardless of origin. This fungibility has a history, well told elsewhere (Cronon 1991). But as food companies have pursued sustainable sourcing via projects and personal relationships, they have invested more time and resources in some origins than others, and come to know more about them.⁶ Sustained ties with farmers in specific millsheds and counties could become even more important as food brands and commodity trading firms pursue their current regenerative agriculture and climate goals, since these require both incentivizing certain on-farm practices and collecting information about them over time. The broader implications of these changes supply chain relationships – and of those farmers' crops becoming effectively nonfungible – are hard to predict, but well worth following.

For now, this paper has shown how analyzing governance as a form of managerial work – work that is contextual, relational, and both dependent on and productive of specialized practical knowledge – provides insight into how and why governance strategies have changed at a corporate and even industry scale. While some of the changes documented here are specific to US commodity crop supply chains, the basic analytical framework is not. Nor does this framework, with its attention to managers' own accounts of their work, neglect the insights of the agri-food governance scholarship focused on sustainability as a firm-level business strategy (Ponte 2019). Rather, this analysis has shown that firms' mobilizing of science-based governance tools does not always go as planned, and indeed does not go anywhere at all without the practical skills and knowledge that managers need in their work. Closer attention to this work makes it easier to appreciate how corporate power may encourage the bold ambitions of governance, but does not assure its outcomes.

Acknowledgements The research for this article was funded by National Science Foundation grant #1456910. I also owe thanks to Matthew Sanderson and two anonymous reviewers for their constructive feedback, and to the interviewees who shared their time and

⁶ Kellogg's has trademarked the term: its *Kellogg's Origins*TM program aims “to build partnerships with farmers that support their climate, social, and economic resiliency” (https://www.kelloggs.com/en_US/sustainability/working-with-farmers.html).

insights. All mistakes are my own.

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