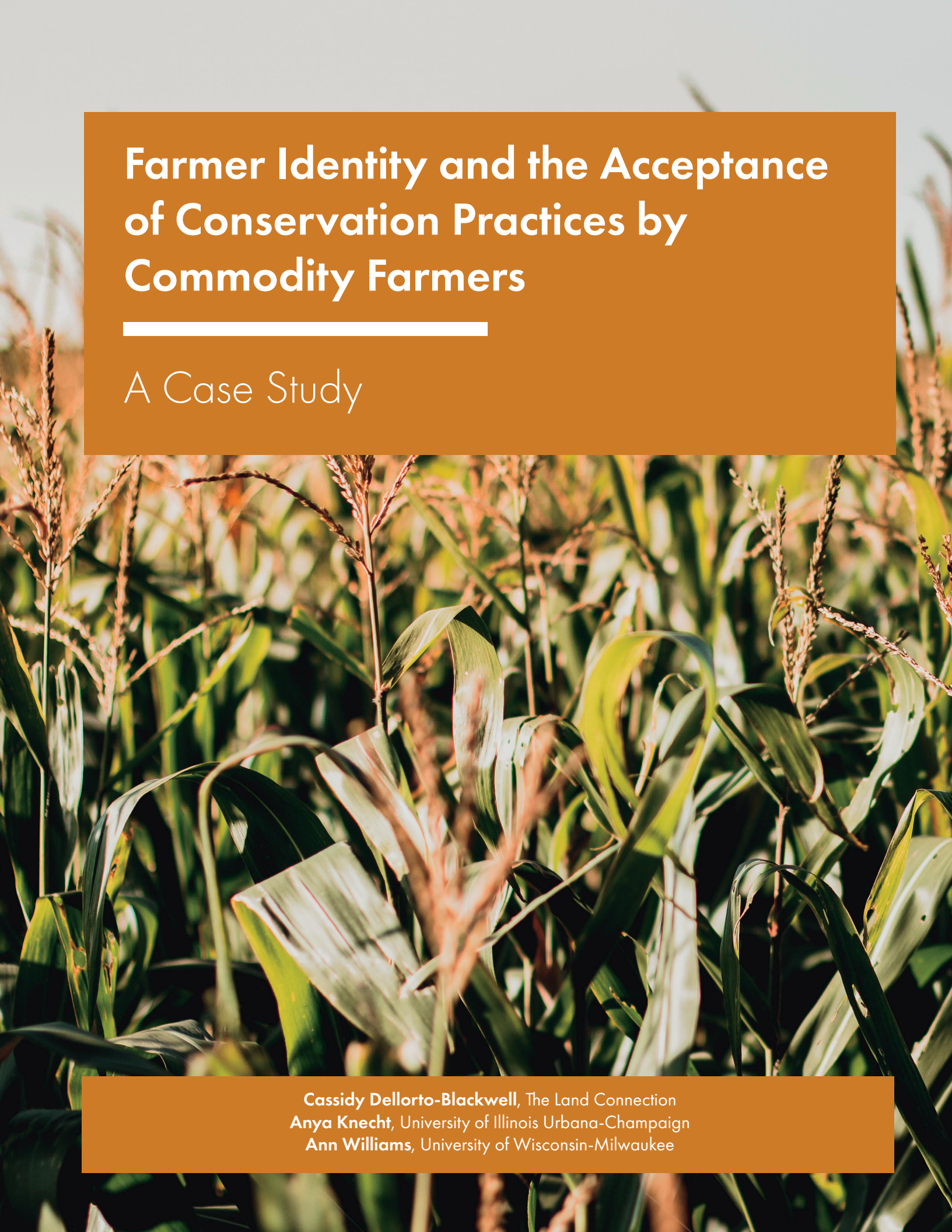
Farmer Identity and the Acceptance of Conservation Practices by Commodity Farmers

A Case Study



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Abstract

Over the last several decades, much effort has been focused on encouraging commodity farmers to adopt conservation practices. Though these practices have clear benefits, the pace of adoption continues to be relatively slow. Existing research does not explain why some farmers operating under similar conditions adopt conservation practices and others do not. It has been suggested that identity plays a role in the process, but its impact is not well understood.

The objective of this study was: (1) To learn if and/or how identity plays a role in adoption of conservation practices by commodity farmers and (2) To provide recommendations for educators on how to increase the acceptability of these practices.

Data was gathered through in-depth interviews with 20 east central Illinois farmers. Some of these family farmers had incorporated a large number of conservation practices and others none at all. Cover crops were discussed at length since most had adopted or were considering adoption of this practice.

Analysis of the farmers' narratives revealed a shared identity embedded in the system of industrial agriculture. The sources of information they trusted and the reference groups with whom they most closely identified were found within industrial agriculture, as was the language they used to describe themselves and their decision-making processes. While there were functional barriers in the implementation of conservation practices, the farmers generally did not find them insurmountable.

Questions for educators emerged: Would educational programs encouraging transition to conservation practices be more successful if they more accurately reflected farmer identity vs. the perspectives of educators? Given the sources of power in the system of industrial commodity agriculture, could conservation practices assist farmers in maintaining their land base as farmland consolidation continues?

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Images used throughout this report do not showcase any of the participants in the research or their farming operations. The images are property of The Land Connection and reflect our staff's collective experiences interacting with farmers around the Midwest.

Introduction

Over the last several decades much effort has been focused on encouraging commodity farmers to adopt conservation practices. Though there are obvious benefits derived from implementing conservation practices, accompanied by a seemingly low level of economic risk, the rate of adoption continues to be relatively slow. Myriad educational programs conducted by public agencies, nonprofit organizations, and university extension services continue to rely on the creation of awareness of conservation practices as a driver of change, though meta-analysis shows that the relationship between awareness and adoption is weak (Baumgart-Getz, Prokopy & Floress, 2012).

Much of the early research situated farmers as autonomous actors motivated by profit maximization (Cary & Wilkinson, 1997) or described a trade-off between economic and noneconomic factors (Chouinard, Paterson, Wandschneider & Ohler, 2008). As it has become clear that the adoption process is complex, research incorporating social factors in the construction of models has raised even more questions (Floress, et. al., 2017). It does not explain the differences among farmers operating under similar conditions, and cultural and social factors are often subsumed in the variables of "attitude" and "identity." The meaning and implications of these variables are not well-defined across disciplines. The categories tend to be overly reductive and the models have no mechanism to account for change. More recently it has been suggested that occupational identity be explored as a variable (Groth & Curtis, 2017).

Research Purpose and Objectives

The purpose of the research was to contribute an additional dimension to the research regarding the adoption of conservation practices. The objective was to provide recommendations for educators on how to mitigate risk and increase the attractiveness of beneficial conservation practices through a process of active listening and observation—a process which combines listening for recurring identity "stories" or narratives, analyzing the descriptive language used, and highlighting the industrial agriculture network components which reduce risk and/or increase the attractiveness of conservation practices.

Theoretical Framework

In this case study, the exploration of occupational identity was viewed as a dynamic process rather than a predictive variable. The farmers' "stories," drawn from 20 in-depth semi-structured interviews, illuminated how interactions with people, technology, land, and institutions combined to create a shared identity, and revealed a network created by industrial agriculture. It is within the system created by this network that farmers make their decisions about conservation practices. The goal of the study was to recommend a systems-based program development process that goes beyond economic outcomes and practical production information to enable a higher level of acceptance and implementation of conservation practices.

In any system or network, the decision-making process is iterative, subject to continuous negotiation and renegotiation, as are the steps that lead to changes in practice (Burgess, Clark & Harrison, 2000). Commodity farmers are situated in a larger context or system in which interactions with people, technology, and institutions continuously combine and recombine to create a shared identity. It is through the process of social identity-making that farmers integrate their diverse experiences into a unified whole (Baumeister, 1998; Markus & Wurf, 1987; Gecas, 1982). Farmers' identity narratives illuminate the system and its conditions as they perceive them to exist at that moment and place in time.

Authenticity is important in an identity narrative. The teller wants it to reflect who they really are. A successful identity story is an authentic reflection that seamlessly integrates both past and present (Ashforth, 2001) and is well-received by those who are important in the system. If farmers are ambivalent about adopting a new practice or do not see it as part of their authentic story, they may even be hesitant to propose the practice to important network actors: family, friends, lenders, and landlords (Ibarra & Barbulescu, 2010). There is considerable risk involved in this process and the farmers are aware that the wrong narrative can cause others to view them as less fit. However, when a farmer has a story which resonates with others, especially with those who have power in the relationship, the risk of adopting an innovation is reduced (Everett and Rodgers, 1995).

The farmers in our study highly identified with their roles as "independent" farmers and explained at some length how this identity was both distinct and integrated with their other identities as sons, fathers, husbands, romantic partners, church members, friends, and community members. They told the story of their families, their farms, and the forces which affect their operations with ease. They explained how and why they had made a number of management decisions, including decisions about conservation from within the context of a shared identity.

According to social scientists, every person has multiple socially-constructed identities (Goffman, 1959, Mead, 1934). When a farmer, or anyone, wishes to adopt new practices—especially highly visible ones—that are inconsistent with their current identity, they will provide a new narrative about themselves that successfully links the past and the present in a new identity (Ashforth, 2001). They typically test an emerging narrative on others to judge how it will be received before settling on a final version.

Ibarra and Barabulescu (2010) note that it is necessary to have a persuasive narrative if you want to convince others—family, friends, lenders, or (in our case) landlords—of the veracity of what you are saying. When a farmer constructs a narrative that resonates with the powerful, the risk of adopting an innovation is reduced (Orr, 2003).

Authenticity is important in an identity narrative. The teller wants it to reflect who they really are. Over time a well-honed identity narrative becomes the authentic story about oneself. The farmers in our study generally seemed to enjoy telling their stories. The older farmers, especially, offered advice to younger generations and were quick to criticize other farmers and landowners they believed were acting inauthentically or unethically.

The family farmers in this study are part of a system or network composed of people, technology, and institutions. The network creates opportunities and, at the same time, limits choices. It impacts the relationships, actions, and identity of the farmers (Gray & Gibson, 2013). The result of network relations, in which ideological and material influences are seamlessly combined, creates knowledge which informs the farmers' actions at any given point in time. The system described by farmers in the interviews is both dynamic and unique, though most of the elements of the network were in place at the beginning of our study and will exist into the future.

In a study of Kansas commodity farmers Gray and Gibson (2013) concluded:

> We find that the identities and practices of Kansas grain farmers are effects of their deep involvement in the industrial agricultural network and that both the farmers and the network change over time. Farmers' participation in the network increased their commitment to the ideologies, practices and technologies of industrial agriculture.

The concept of Actor Network Theory (ANT) informed the analysis of the interview data. ANT focuses on the movement of power and influence in the network with regard to the decision making, rather than conceptualizing the farmer as an autonomous actor (Latour, 1999). As Latour (1999:16) notes that when researchers regard decisions on the level of the individual, they "quickly realize that many of [the] elements necessary to make sense of the situation are already in place or coming from far away."

As participants in the network of industrial agriculture, farmers are defined and re-defined by their interactions with institutions, technologies, objects, and other persons in the system. (The terms network and system are used interchangeably in this report.) They are not autonomous decision-makers; their possibilities are expanded and limited by the network and individual decisions are facilitated or constrained by it.

In this study farmers' identity "stories" revealed not only how they experienced the network, but how they envisioned themselves as successful decision-makers within it. The narratives illuminated how the farmers perceived the flows of power and influence within the network and how they situated themselves relative to the powerful network forces.

One shortcoming of ANT is that it makes generalization difficult. The farmers who generously agreed to share their thoughts provided a snapshot rooted in a place and time. While the process of observation, listening, and analysis can be transferred to other situations, care should be taken not to generalize the specifics of this case study beyond this particular context.

We believe, though, that our findings have value beyond the specific context in which the data was gathered. While conservation educators have knowledge of farmers and farming practices, they are typically situated in networks (e.g. government, nonprofits, and universities) which are located outside of industrial agriculture. Increased attention to farmer identity narratives allows educators to help to identify persons, technologies, objects, institutions, and symbols that compose the network, and to illuminate the role they play in farmer decisions regarding the adoption of new practices. Understanding the network and how it functions will assist educators in creating program content that more closely reflects farmers' interactions with sources of power and influence.

Methods

Twenty semi-structured farmer interviews were conducted by Anya Knecht, an experienced interviewer, who was knowledgeable about geographic area, commodity agriculture production, and knew or was known to the farmers. Her expertise and position of trust with the farmers provided a space for the thoughtful and reflective ethnographic conversations that compose the data set for this study. We purposely asked broad, open-ended questions designed to elicit reflections, followed by several direct questions designed to capture facts regarding the implementation of conservation practices. We were rewarded in this approach with wonderfully rich responses ranging from family history, to observations about life, relationships, the future of farming, and the farmer's place in it.

The interviews were a little over an hour in length; a couple were a little shorter and two ran more than an hour-and-a-half. Eighteen of the interviews were conducted on-farm during late 2019 and the first quarter of 2020. Due to the onset of COVID-19, two interviews were conducted remotely: one interview was conducted via Zoom and one via telephone.

All of the farmers were pre-screened to ensure they met the criteria for the study: currently farming as owners or shareholders in family-farm corporations, intending to continue farming, a primary decision-maker for the farm, and growing commodity row crops (primarily corn and soybeans). Their involvement with conservation ranged from regular comprehensive use of conservation practices to little or no implementation.

All of the participants were male, ranged in age from 33 to 71 years old, and had been farming from four to 48 years. The farms averaged approximately 2,000 acres in size. The majority of the farmers leased more than half of their land. Two farms owned all of their land.

Findings

Shared Identity

The findings were drawn from the interview data, which reflected the farmers' perceptions at the time of the interviews. After some discussion, it was decided not to make any attempts to verify the factual accuracy of their statements—that "perception is reality" in the decision-making process.

We were surprised by the high level of agreement in the farmers' identity stories regarding the network of industrial agriculture and what one must be and what one must do to operate successfully in this system. We found that farmers relished the independence that came from controlling their day-to-day activities and, at the same time, they were willing and able to adapt to a system in which their options were quite circumscribed. Excerpts from the interviews compose much of the following sections.

We predicted that the identity narratives of farmers who had adopted a relatively high number of conservation practices would highlight a different decision-making process based on a different set of factors (or variables) than the farmers who had adopted few or none of the practices. When we found little difference, we realized that the narratives reflected farmers' interactions with the industrial agriculture system in which they were all situated. All of the farmers in this case study were located in the same geographic area and interacted with essentially the same network conditions.

Network Conditions

Autonomous Independent Adapters
Farmers agreed that the independence of farming was one thing they liked most about it. It was viewed as an intensely individual endeavor; the independent farmer who stays afloat in a sea of change. "Freedom" and "independence" were often mentioned in the interviews. Even the farmers involved in family corporations spoke of the land they individually controlled within the corporation. Few had any full-time employees—they managed the farm themselves or as part of family corporations—with a few seasonal employees, many of whom were family members who "help."

They especially liked the yearly cycles which give them the opportunity to "go again." They liked the rhythm of the seasons: the hard work of the spring and fall and the relative quiet of the winter, when many of the farmers turned their attention to other jobs, conferences, and educational activities, and took more time for family or travel.

The farmers liked being independent, but they were always aware of the forces beyond their control. They acknowledged that their decisions were mostly tactical, a matter of deciding what to do and when to do it based on their reading of the system at any given time. After talking at length about how "freedom" was the thing he liked most about farming, one farmer laughed and said the "lack of freedom," the areas out of his control, was what he liked least.

> "Being independent, versatile, and productive are important parts of my identity. Not necessarily tied to a vocation, but just sort of intertwined with it."
>
> "I like the challenge. I like the freedom it gives me . . . To be a farmer you have to be self-motivated." He said he tells his kids, "I can start you down the path, but then you've got to figure it out." He went on, "Farmers are very independent, and I've always tried to instill that in them [the kids], to be independent."
>
> One young man who had farmed with his father for just over 10 years said, "What do I like [about farming]? [I] like the flexibility of farming. I like the optimism of a new year. I like being self-employed and basically the responsibility being on myself and no one else . . . I like changing things year in, year out . . . The seasons . . . of getting to start a task and seeing it finished . . . It's just a great lifestyle that farming brings."

Sources of Information

One farmer commented that things had changed since the days of his grandfather, when the primary challenge was "literally, man against the land . . . " These days, commodity farming pits the farmer's wits against powerful network forces over which they have little or no control. According to the farmers, their ability to access and interpret data and information is important if one wants to be a successful farmer.

Farmers had close ties with professional service providers and vendors, and named them as their primary information sources. Corporate representatives cited throughout the interviews included: Pioneer (crop seed), John Deere (machinery), and Farm Credit Services (lender). A variety of professional agronomists, fertilizer, and chemical dealers were also named as important sources of information.

The farmers' level of reliance on agribusiness professionals was not surprising. According to the farmers, commercial representatives tend to be attentive to their needs and provide practical information. In their younger years, many of the farmers worked for large agribusinesses or in other capacities for several years before returning to the farm. Several had adult children working for large agribusinesses.

Internet-based marketing and information services were accessed, sometimes on a subscription basis. Large corporations also provided the farmers with access to agricultural information management systems, such as John Deere's Apex and Monsanto's Climate, which upload and interpret their farm data in real time.

Many of the farmers followed social media farmer groups and news feeds. A few—especially older farmers—still read magazines. University research was mentioned as an indirect source of information which commercial sources would "point to," but generally not as a direct source of information.

All of the farmers attended a number of meetings, conferences, and trade shows, typically four to six per year. Some of the younger farmers attended as many as 15. Meetings and conferences offered the chance to learn from experts, but were especially valued for the opportunity to socialize with other farmers and to learn what they were thinking, doing, and planning.

Farmers at these events were often from other geographic areas and farmers felt they could be open with them about their operations: "When you are in a big group and you are not competitors then you can share stuff." Though nearby farmers were often friends and sources of day-to-day information, they were viewed by some farmers as competitors with whom they were reluctant to share specifics about their plans.

Family continues to be intertwined with farmer identity, though to a much lesser extent than it has been historically. Some of the younger farmers mentioned parents and family members who were experienced farmers as information sources, as people they could learn from. Though the farm corporations in our sample were composed almost exclusively of other family members, they tended not to be involved in the day-to-day farm work and farm decisions. Some of the farmers and their families lived off-farm, even in the city. Their spouses typically had off-farm jobs and their children were involved in school activities. Some of the farmers themselves even had second jobs or owned small businesses, such as newsletter publishing, commodity trading, and bookkeeping for a spouse's business.

Several of the farmers expressed nostalgia for the way things used to be, when farms were smaller and their families and most others in their rural communities were involved in agriculture. But they were quick to note that their ability to adapt to changing conditions was the reason why they were still in business and others were not, and quickly moved on from the nostalgic longings.

One farmer reminisced about riding with his father on the tractor after school and expressed regret that his children could not do it: "Now we're spread out. I'm 30 miles away. You just can't run out there after school and come ride with me. So, that's been a disappointment in the way things worked out. But it's nothing. You go where the land is and that's the way it works."

"I would have to say there's not the sense of community there used to be when I grew up . . . Farming used to be the total way of life and now it's changed to where it's a business . . . the people who are left are those who approach it as a business."

Another commented that his children do not do much farm work because the machinery has gotten big enough that "I don't need much help."

Increasing Farm Size – Land Scarcity Driven by Technological "Advances"

The technology-driven trend of increasing farm size was writ large throughout the interviews. Shrinking margins—which farmers attributed to increasing investments in machinery, equipment, and other technology—created an ongoing need to obtain more land. Sunk investment in technology made the potential loss of land and/or the inability to access more land one of the biggest risks of farming. While several farmers opined that in theory, one could farm successfully with smaller machinery and lower inputs, no one expressed much confidence that it could work.

A farmer operating approximately 1,500 acres summed it up: "There is no doubt that the unfortunate trend of larger will continue. It's not about to slow down. When I started, 300 acres was enough maybe [for] a person to survive on. Now it's impossible if that's your only source of income. So, I'm sure that farm size will continue to increase, and you'll see consolidations and fewer and fewer farmers as time goes by."

One farmer commented, "The little farmer will probably be crowded out due to the ongoing expenses. When it costs half-a-million dollars for a combine or tractor, not too many people can afford that . . . It does seem as though expansion, for us anyway, has been slow and harder to come by."

Yet another described the situation in plain language: "Most guys have too much equipment and they could easily farm another couple hundred acres and everybody wants to. So, when everybody wants it and there's only so much ground, it's competitive."

Most of the older farmers in the study had been offered land to buy or rent as neighbors retired. One farmer characterized the process like this: "We're not aggressively seeking out new farm ground that other farmers are farming, nothing like that. We've never done that. But, if there's an opportunity, we haven't said 'no.'"

They believed the earlier norm of being offered land is in the past. A recurring thread throughout the interviews was that farmers have increasingly found themselves in competition with their friends, neighbors, and "megafarms" for scarce land. Only the winners of competition will be able to continue on.

"Whereas farmers are really fine people and would oftentimes do anything for their neighbor, there are many farmers that would do literally anything to rent somebody else's farm ground."

A farmer in his 50's said he hoped to add a couple hundred acres from "somewhere" to his 1,200-acre farm and "hold on until I retire." The vast majority of his land was rented and even though one of his children was interested in farming, he felt that he would not have enough land to pass on to his children in order to continue as a working farm beyond his generation.

An experienced farmer said, "I don't know what he [my son] is going to do. Like I said, I gave him a couple fields this year and he's going to start farming. But I don't want to give up much ground. He's got to go find it. Unless he wants to compete with those guys [megafarms], it's hard for him to pick up ground."

The Power of Landlords

Continued access to an adequate amount of land is one of the biggest risks for these family farmers and it places those who have land to offer for rent in a position of power in the network. The amount of time spent by the farmers discussing the finer points of dealing with landlords focused our attention on their influence. While farmers offered varying advice about dealing with landlords, the bottom line was to conform to the landlord's wishes for the land, no matter how unfair, misguided, or downright ridiculous.

"In renting ground, it's been my belief [and] policy that I do whatever the landowner wants . . . I might suggest or would have a plan, but if the landowner wanted to do something else, in fact it's their ground and I do what they want. I am employed or rent at their pleasure."

One farmer even went so far as saying that being "fired" by a landlord with whom he disagreed was "the greatest lesson ever."

The perception was that landlords want a consistent flow of income from their land year-in and year-out and will rent to the top bidder who can reliably provide it:

"They say that we need younger farmers to do this and they need a leg up. When it comes time to rent the ground, they rent it to the guy down the road who is already farming 4,000 acres, because he's got the money and he can afford to pay them more. All of sudden it becomes all about the dollars then."

A farmer who had picked up rental land in earlier years from retiring neighbors said, "Now it's when a neighbor quits, he's got a megafarmer offering him $400 an acre rent and that stuff is hard to turn down."

"Like landlords, [it used to be] that they were closer to the farm . . . They got ground and they were proud of it and they wanted to take care of the tenant, as well as the tenant take care of the ground. Since then, that ground has moved into younger hands who were farther away from farming. Now all they want is money . . . So it's more cutthroat."

Consolidation Continues – The Landscape Evolves

Once it was possible to grow the farm through acquiring–either buying or renting—the land of retiring neighbors or family members. Being a competent farmer, a respected member of the community, and a good neighbor was enough. In the future, anticipating and aligning oneself with the desires of those who control land will increasingly be required of those who want to continue farming. As more land comes to be managed by professionals, understanding and even anticipating the desires of farm managers and the urban landowners whom they represent will be a necessary skill set.

Some of the older farmers (who had been offered most of their rental land) suggested there were acceptable social norms for obtaining land and complained at length about those who did not follow them. While they felt it was acceptable to mention to neighboring farmers that they would be eager to rent their land when they retired, going further than that was out of their comfort zone—though a few admitted they had made contacts regarding land. One said, "I hate doing that . . . It's advantageous if you go put yourself out there and do that, but I feel fake." They agreed that the younger generation would have to be more proactive in obtaining and retaining land if they wanted to continue farming.

One of the younger farmers said, "Well, the biggest [land] deals we have put together recently started on the open market and we've just been the most persistent people that provided a satisfactory offer."

Another younger farmer said he thought having a good reputation was his "number one" advice for someone starting as a new farmer. Then he added, "But I have a good reputation and it has gotten me nowhere as far as renting land."

A farmer, whose son had recently started farming with him and was having difficulty renting enough land, offered this advice: " . . . make relationships. This is the number one goal. Most farmers are good farmers, but you have got to have those contacts. You've got to be friendly to people . . . The network of friends, that's what's going to get your ground rented."

An evolving requirement may be the farmer's ability to articulate and implement a vision for the land which resonates with landlords, farm managers, and their non-farm clients.

One farmer who has been successful in obtaining land said, "Usually my vision is in line with the landlord's. I've picked up a lot of ground, say the last three or four years. A lot of that [land] has farm managers, bank managers and such. I consider these guys to be pretty astute because they see a lot of different things. When I tell them what I want to do on this farm it lines up with what they are thinking and it's like I've got the go ahead." He went on to explain that he has never been successful trying to outbid others on cash rent. He articulates long-term goals which he feels line up with those of farm managers who represent long-term clients and family trusts: "They don't want to roll through tenants."

Another was even more proactive: "We put out a newsletter every couple months to all the people we do business with, and landowners and stuff, let them see what we're doing."

"I think farmers are going to have to adapt to new things they are not accustomed to. I think the consumer is going to demand sustainability. That's the new buzzword . . . It's just a buzzword. I think they're demanding non-GMOs and the organics and all that stuff. Although I'm not doing organics, I'm doing non-GMOs. If they're willing to pay for it they are going to get it . . . I'll do it."

"You know there's lots of people, consumers out there, that think we're drenching their crops in Roundup and trying to poison them. Of course, that's ridiculous . . . I want to try to appease everyone . . . I want to be socially acceptable. I want them to see that 'What this guy is doing . . . There's nothing harmful here.' . . . The first thing is the non-GMO beans and the Frito[-Lay] corn, they want that. The landlords I talk to, if they're interested in cover crops [then], yeah, we're cautiously interested.""

Farmer interactions within the network must be judged as competent. Any changes in practice must demonstrate competence to observers. Practices which fall outside of the norm may be interpreted negatively, indicating that profitability could be at risk.

One farmer related that when he was changing over equipment to implement no-till, a neighbor who stopped by said: "Usually when people do stuff like you just did, they are ready to go broke and go out of business. Is that what is happening to you?" According to the farmer the neighbor "was checking to see if there was going to be land to rent." From the neighbor's point of view "for a person to make that kind of switch . . . they're usually in financial trouble."

Yield as Symbol of Farmer Competence and Profitability

Throughout the interviews, yield per acre was frequently invoked as the primary indicator of profitability. Farmers believed that increasing costs per acre were inevitable and their overarching goal was to maintain or increase production per acre. The perceived effect of any practice on yield per acre was putatively the yardstick against which all decisions were evaluated, though some farmers commented that they were unable to sort out if specific investments in inputs and technology were actually cost effective.

A farmer who was paying $1,500 per year for a subscription to a field data management platform said, "I feel like I've compiled all this data over the last five or six years, especially with FieldView, different things [inputs] we're using. But I don't know that I really feel like I'm using it for something that's making me money."

Reflecting on how new equipment was bigger, faster, and more expensive another said, "We've got all this technology in these planters . . . I have a friend whose planter is straight from the factory [and] does a pretty nice job. Are we gaining enough with all this to offset the cost of it? I'm not sure I know the answer to that."

With regard to conservation practices, one farmer said, "I love being able to conserve, but sometimes when it comes at the expense of yield or bushels per acre, it's really hard for an individual farmer, small farmer, to justify that because [of] the taxes and cost per acre. Everything continues to go up each year and every acre has to pull its own."

Functional Conditions Impacting Conservation Decisions

The Learning Curve

All new practices have a learning curve including both tangible and intangible "costs." Farmers were concerned that yield per acre could be negatively impacted by the implementation of conservation practices, or cover crops in this case. There was also the time and potential aggravation that accompanies the implementation learning curve.

"I think there are benefits [with cover crops] . . . but it's catching on pretty slow. It's just really hard to implement . . . If you screw it up you can do more damage than good and you can cost yourself a lot of money."

"Well, I messed with it [cover crops] briefly and I wasn't satisfied . . . It was hard to control; it got too big before I got it under control in the spring . . . My uncle in Ohio, he planted turnips one year . . . He had a heck of a time because they were just these mammoth turnips and they hadn't degraded at all [by spring] . . . I just can't imagine." The farmer went on to say he would try cover crops again only if it was mandated. He would tell his grandson to "try and learn it."

"We're just now battling with cover crops. [My son] kind of got me on board with that. It's a learning curve. I have to admit, there's times I question if we are going to see the benefits as much as some people say there is . . . There's some challenges to it . . . It just gets down to managing it."

"You can't use corn [with cover crops]. And you can't see where you are going in. All you see is grass. I did goo up my planter and it took me an hour-and-a-half to clean that out. As soon as it started to plug I thought, 'I've got a big problem' [and] raised it up. But then I'm out there cleaning it off. So, that makes it tough. . . . You can't tell what the soil is like. You can't see the wet spots . . . So that's a bit of a challenge . . . "

Scarce Labor and Lack of Equipment

To a large extent, machinery, equipment, and technology investments define the dominant set of practices in industrial agriculture. A scarcity of farm labor, combined with investments in machinery and equipment, places constraints on family farm operations.

The farmers in our study hired relatively little labor for several reasons. Farm consolidation had resulted in fewer and fewer people in the surrounding communities with agricultural experience. At the same time, the machinery was becoming larger and more complex to operate. Some of the older farmers mentioned that it took them a considerable amount of time to learn how to operate some of the newer machinery. Others commented that it was difficult to find employees with the requisite skills.

Three of the farms in the study had full-time employees, but generally farmers depended on their own labor. At harvest time, immediate family members often came home to "help out" and they hired other relatives and local people on a part-time basis. The implementation of new practices requiring additional labor and specialized equipment presented a challenge.

One farmer said, "At least for right now, I think there are some practical constraints on how big you can get . . . unless you just really like being a full-time manager chasing employees around . . . which doesn't sound like a good time to me."

Another commented that he was a perfectionist and found it difficult to manage employees because their work did not come up to his standards.

Most of the farmers did not have the equipment needed to plant cover crops. One solved the problem by hiring some "really helpful guys." They sold him the seed, custom applied it, and "took care of everything."

Conservation Practices Increase Complexity

In farm operations, where weather is always uncertain and labor is short in supply, adding conservation practices increases the complexity of an already complex situation. As farms grow in size and rental land becomes harder to obtain, the distance between fields increases the time and complexity of adding practices, which require additional trips over the field and must be timed to accommodate weather conditions, road closures, etc. Farmers typically were traveling 15 to 25 miles between their farthest fields. One was traveling 70 miles (a 45-mile radius). One farmer recalled struggling to plant soybeans with a rye grass cover crop after a road closure and unexpected rain:

"It's a learning curve. It definitely presents more problems in wet years; we found that out... It's getting your roads closed. That's the biggest problem... You want to plant into a living plant, not one that you've gotten sprayed first. We thought we could time it out . . . Spray first and then we'll plant it. It was supposed to be dry for a week. That didn't turn out to be the case. So, we went out there pushing it, because if you don't kill your rye grass it could fall and mat, and you've got a problem. So, we ended up not planting in the best conditions . . . There were some areas that had slits in the ground, you could see the soybean. Soybeans, thank goodness, are forgiving and it kept raining."

Farmers who had implemented a number of conservation practices over many years indicated that conservation gave them a competitive advantage. For at least one farmer, recognition of the competitive advantage was clearly retrospective rather than the motivator of past activity. Another farmer, who had widely implemented conservation practice over the years, was actively using his practices to promote his farm.

> "If I'm promoting our farm over others, that's our edge, the sustainability edge . . . When no-till started, it's a little harder, a little more management. You throw cover crops in, it's a whole nother level of problems . . . It's all manageable . . . but you just can't go out in the field and start working the ground and go planting . . . It's another level of complexity."
>
> "My landlords are pretty much all in on conservation. [I'm] lucky there . . . The conservation program we have with the soil and water district, it kind of rates people on their conservation practices and you get a rating from one to five stars . . . There are some farm managers who know about this and they called into the office and said, 'We're looking for a conservation-minded farmer [to rent our land].' They're using the people who are signed up into that program to identify those people. That was kind of cool. I got called on that and I wasn't even trying."

Adoption of Conservation Practices

Cover Crops as an Example

The farmers' comments on cover crops provided a "window" into their thoughts regarding conservation and the implementation of conservation practices. Some farmers had implemented or experimented with cover crops, while several others were considering it. All had at least thought about implementing cover crops. In addition, the farmers believed the practice was of interest to landlords, farm managers, and the government. It had recently been incentivized by Frito-Lay, an important corn buyer in the area.

Weak Support for Conservation

Farmers indicated that they were generally "not against conservation." The farmers who had implemented a few or no conservation practices situated the decision regarding a specific practice (e.g. cover crops) primarily as a business decision: the opportunity to gain a competitive edge, to pre-empt more onerous regulatory demands, and to take advantage of incentives. In short, good reasons to implement conservation practices would be clear financial benefits or to make someone else happy. They typically expressed doubt that the practices were anything more than to "look good" or "feel good," unless one needed to control erosion on steep land.

A farmer who had not implemented conservation practices said he was "not opposed" to conservation: "I feel like what we're doing [no conservation practices] yields us the highest yield, but I could be wrong there . . . If there was some type of financial incentive, we could consider trying other things. If somebody shows me enough data to convince me one way or the other. None of us [are] stuck in our ways . . . "

"I think it's the perception that people have about [conservation practices] as much as anything that they think they are doing something great. It's a look-good or feel-good thing that they've adapted a practice that in reality . . . [when] everything's figured up with the additional labor and the additional cost of equipment and everything, if there's really an adequate return there or not."

A farmer who had experimented with some practices on a limited basis said, "I don't have anything against conservation. I mean, I want to conserve. [But,] I don't want to do anything that's harmful or costs more money . . . I just want to be profitable . . . Let's open our eyes here. Are these tillage practices really worthwhile? Can we do things differently and come out with the same result [maintain yield]? . . . Trying something new is scary when something else works and you're not sure of something. If it doesn't work and it costs you money, boy, that's really a stinker."

A farmer who had used cover crops for seven-to-eight years commented on the availability of incentives, "I guess I do it [cover crops] because I do believe in conservation . . . and if somebody is going to help financially with new programs, I'd be very willing to participate. But, if it wasn't for the financial incentive, I don't know how anxious I would be to participate."

Another farmer who had tried a limited amount of no-till on his land questioned the return: "Depending on the practice . . . I think the majority of them are good ideas. I don't know if they are always economically feasible, the return on them and stuff . . . The cash rent landlord, they still expect conservation practices to be put into effect. And if they don't show a positive return for the farmer, when they are paying such high cash rent, you can't really expect them to put those practices in . . . [Even with incentives,] by the time you factor in the equipment and the labor and stuff involved, is it really a true return?"

Commodity crop farming was conceptualized by most of the farmers as a series of one-year cycles. It was one of the characteristics of farming they liked most: the chance to "go again." The maintenance of high yields on a year-to-year basis was cited as "proof" of farmer competence. Even the farmers who had committed to conservation over many years were careful to situate themselves as market-oriented commodity farmers, not part of the "cult" of sustainable and organic farming. They believed themselves to be outliers in personality, skills, and interests compared to their peers. They mentioned the long-term nature of conservation, their interest in the soil, and a lack of interest in having the largest and newest equipment as major differentiators.

A farmer who had implemented a high number of practices explained why others had not done so: "Most farmers are looking for a one-year return on investment and conservation practices really don't fit that need because it's a long-term investment . . . Farmers think linearly—input, output."

"I don't have a particular four-wheel drive tractor; I don't need one."

"I didn't get into farming because I was a born tractor driver. A lot of guys are just born tractor drivers and that wasn't me at all . . . I like the agronomic parts to it. I like to improve the soil . . . "

"They [other farmers] think, 'Why in the world would you do that [conservation], you're crazy!'"

Uninformed Conservation Advocates

Farmers tended to see the desire for conservation practices as originating with actors articulating vague notions about sustainability and lacking in understanding about the realities of farming. While one farmer cited the desires of a specific landlord, "they" were conceptualized mostly in monolithic terms: corporations, government, consumers, and society. The language used by the farmers to describe entities favoring conservation tended to situate them as outsiders attempting to impact farmer decisions in an unwelcome manner.

"Anything we can do to preserve the soil is a good thing. Now, some of it's a little farther than I think we're going to go . . . the practicality of it all . . . a lot of these techniques that they're touting."

"I think society is coming to the place where water quality is such an issue that if somebody decides that every acre has to have a cover crop on it after harvest, then you'll be forced to do that."

"They [the landlord] were wanting to go, well, to basically a different type of fertility program. They weren't wanting to put on any fertilizer . . . Now I'm using chicken manure, which is kind of to appease them, even though we're spending a lot of money . . . to get the same result." He goes on to say that after six years, "I'm seeing the same [yield] result. It's just incurring a lot more cost to get the same result."

"This is only about sustainability [on the part of corporations] because mom at the grocery store wants to buy sustainable, whatever that is. And so, what's sustainable? . . . These big companies are defining what sustainable is . . . "

A farmer who had tried cover crops recently for the first time thought if farmers adopt conservation practices it will be primarily because they have to: the "government putting their finger on it." He went on, "I'll tell you, Frito-Lay [local corn buyer] wants you to do this . . . They're not smacking you on the hand if you don't do it, but I feel like you may get a pat on the back if you do a little bit of it."

Another said, "I see regulation coming rather than going."

Even one of the farmers who had demonstrated a long-term commitment to conservation pushed back against what he considered misguided meddling: "Corporate America is pushing this more sustainable agenda . . . Computer companies—Google, Microsoft and that—are investing hundreds of millions of dollars trying to figure out how to convince farmers in the Midwest to be 100% cover crops and all this . . . You've got to think of the type of people you have living out in those areas that are making all that money and making those decisions . . . They want to create utopia, the perfect world, which doesn't exist, but they think they can make it happen. They've got money to blow and they want to push those agendas out here . . . And me, I do it as a long-term game plan. I just like to do it [conservation]. But a lot of guys will be like, 'Well, that didn't pay me back any money, so why would I do that?'"

Discussion

A Dynamic System

There was disagreement among the farmers regarding whether cover crops and other conservation practices were beneficial, if they were needed, and their impact on yield. The decision on whether to implement cover crops was discussed in similar language by farmers across the study: the actual or perceived impact on yield and profitability. The identity-based nature of farmer narratives was most evident when one of the farmers who had widely implemented conservation practices over a number of years struggled to explain his decisions in terms of yield, and finally characterized it as a personal decision: "I just like to do it."

Farmers' assessment of whether implementing cover crops and other conservation practices could or would give them a competitive edge varied, illuminating the contested meaning of conservation. For example, some farmers commented that cover crops were regarded favorably by Frito-Lay (local corn buyer), farm managers, and landowners. And that implementation gave them a competitive edge, or would at least result in a more favorable view, of their farm operations by these important actors. Others believed the implementation of conservation practices was regarded as a risk to yield and even an indicator of financial distress by landowners and other local farmers.

Comments by the early adopters of conservation practices indicated they recognized the competitive potential of their practices only in retrospect. The farmer who said that sustainable practices were his "hallmark" had difficulty defending the practices beyond the competitive edge they provided, though it was unlikely this advantage was present at the time he implemented most of the practices. Another farmer who had adopted a number of conservation practices felt "lucky" his landlords accepted the practices and expressed surprise that they might actually be a benefit in acquiring rental land. When he was contacted about rental land based on his conservation rating, he commented that it was "cool," and he "wasn't even trying!"

Conservation is not Glamorous

Concern that cover crops and other conservation practices would negatively impact yields and profitability was cited as the primary reason for hesitancy. At the same time, most of the farmers appeared to be willing to invest in new technology and increasing levels of inputs even when they were not able to sort out their overall impact on profitability. A number of the farmers complained about the challenges of implementing cover crops, but they seemed to accept the time and effort required to use new technology.

Farmers have been "sold" technology by corporations sophisticated in creating desire. And these same corporations have provided skilled and attentive representatives who assist them in using it. Assured by trusted agribusiness advisors that the technology would produce results, they took it on faith, though some admitted they were not actually able to determine if this was the case.

Why are the barriers to adopting new technology, machinery, and equipment lower than the barriers to adopting conservation practices? Not only is new machinery and technology accompanied by high levels of support from trusted sources, it has a different meaning than conservation. As one farmer commented, " . . . Conservation is probably not as glamorous as conventional tillage . . . and all that equipment is dripping with testosterone."

Farmer Relationships within the Network

The farmers' relationships with the large corporations that dominate the industry was complex. In most cases, agribusiness corporations were characterized as ruthless monolithic forces, but their representatives, with whom the farmers interacted on a regular basis, were their most trusted sources of information. Some of the farmers and their family members have been employed or continued to be employed by these large corporations and they spoke in positive terms about these relationships.

The farmers described the advocates of conservation practices—landlords, society, large corporations, and consumers—as generally lacking knowledge and understanding of the realities of commodity farming. They did not look to universities for information of practical use either, though one farmer allowed that much of the information he used "pointed back" to university research.

The farmers' relationship with education was also complex. Most of the farmers had completed post-secondary education at either a local community college agriculture program or had graduated from the nearby University of Illinois. They generally thought that education had been of benefit to them and were eager for their children to attend college as well. But they saw the value of their college experience primarily as social rather than informational. It was a facilitator of important relationships through agriculture fraternities and the like, which they could draw on for the rest of their lives. In addition to relationships with other students, post-secondary education provided the cultural and social capital needed to feel at ease in the world. One farmer commented that when he traveled by air, he was indistinguishable from the other business travelers he encountered; they would have no way of knowing he was a farmer.

Summary and Conclusions

The conservation decision-making process is continuously negotiated and re-negotiated, as are the steps that lead to changes in practice (Burgess, Clark & Harrison, 2000). Commodity farmers are situated in a larger context (or system) in which interactions with people, technology, and institutions continuously combine and recombine to create a shared identity. In this study, the identity narratives of family farmers illuminated the system and its conditions as they perceived them to exist at that moment and place in time.

The farmers across the sample relied on the language of the market to describe their conservation decisions in terms of yield, profitability, efficiency, and competitiveness. Most characterized farming as a series of yearly cycles based on inputs and outputs.

In an input-output based system where investments in technology and machinery were perceived to be increasing capacity and shrinking margins, access to land was the limiting factor. This placed landlords and their representatives in a position of power, and farmers in competition with each other for scarce land.

Some farmers expressed nostalgia for the past and mused about the possibility of a return to smaller farms with a lower level of inputs in the future. But in reality, no one seemed to believe the trajectory of the market-driven situation or their role in it as family farmers was likely to change. They relished their day-to-day freedom and independence and were acutely aware of their position as skilled adapters subject to powerful system forces.

The farmers' most trusted sources of information tended to be representatives of large corporations from whom they purchased machinery, equipment, and inputs. They found these representatives to be knowledgeable and attentive to their needs. In addition, the farmers followed a wide variety of other professional communicators who spoke the same market-based language. They were friendly with other local farmers, but also regarded them as competitors. Wary about sharing the specifics of their operations with them, they assumed that their fitness as farmers was constantly being observed and judged in the competition for land.

It should not have been surprising that farmers described their own decisions, including conservation decisions, in the language of the market: yields, profitability, inputs to output ratios, margins, and competition. Conservation practices were described by adopters as a competitive advantage or at least as a way to put themselves into the good graces of powerful advocates. Others described conservation as a risk to reputation and profits, nothing more than "look good" or "feel good," unless one had highly erodible soil (which most of these farmers did not).

Farmers who had already implemented a number of practices noted the competitive advantage these practices accrued to them with landlords, farm managers, and commodity buyers. They attributed their interest in conservation practices to personality traits, skills, and interests they believed were not widely shared among their peers. They believed the longer-term nature of conservation was at odds with the input-output based conception of commodity farming as a series of one-year cycles.

The findings highlight the dynamic nature of decision-making. As the network of industrial agriculture continues to evolve, the conditions and the discourse within it are constantly changing. It was not clear from the interview data why the farmers who began to adopt conservation practices more than a decade ago, or even a couple years ago, had done so. While their narratives reflect a strong identification with the system of industrial agriculture, the early adopters tended to see themselves as network outliers in terms of conservation.

These conversations with farmers provided a blurry "snapshot" of how they perceived their individual positions in the system of industrial commodity agriculture at the end of 2019 and in early 2020. Even at the writing of this report, system conditions have changed and shared identity narratives have continued to evolve. The farmers who committed to conservation practices early on believe themselves to be outliers and based on the data, they are likely correct. Comments by some of the farmers who have just recently experimented with cover crops indicated that they are responding to a mix of network information and opportunities for which the conservation-committed already find themselves well-positioned.

Conservation advocates tended to represent groups who, at best, were thought to be somewhat irrelevant or, at worst, to be ignorant or misguided: consumers, commodity purchasers, landlords, universities, and the government. In this particular case, conservation fell outside of the prevailing discourse by the most trusted sources of information in the system of industrial agriculture.

All of the farmers were acutely aware of conservation advocates as forces that could have a direct or indirect impact on their farm operations. A combination of "carrots and sticks" by advocates had caused some farmers to try cover crops rather reluctantly. But even the farmers who had long been committed to conservation did not view the conservation advocates as allies. They were entities that could create opportunities or must be "appeased"; they could not be completely ignored. For farmers who cite freedom, independence, and productivity as the most rewarding aspects of their occupational identity, it is not a stretch to consider that the advocacy of persons representing conservation-minded groups could encounter passive resistance such as the tepid endorsement: "I'm not against conservation."

The importance of personal relationships should be considered in the adoption of conservation practices. The farmers most trusted the representatives of commercial entities and professionals who were attentive to their needs and with whom they had frequent contact. They also expressed skepticism about the motives of the representatives' corporate employers. Morris (2021) found that farmers who had more face-to-face contacts with USDA Natural Resources Conservation Service (NRCS) professionals were more likely to adopt conservation practices. Might conservation advocacy groups be conceptualized as untrustworthy monoliths because most farmers have few ongoing personal relationships with conservation professionals?

There is a prevailing discourse about certain topics within the system at any given time, and, at the time of these interviews, most of the farmers were aware of cover crops even if they had not tried implementing them. They saw the practice as one to be considered for implementation, given the right circumstances. As they noted many times over, they are not afraid of change.

Farmers are skilled at scanning large quantities of information circulating in the network, deciding what it means, and how it should be valued. Some sources are more powerful than others. Some content resonates with their values, beliefs, and worldview; some does not.

The literature of innovation typically focuses on opinion leadership (Orr, 2003), but in this case it may be more appropriate to first identify the sources of power in farmers' relationships. The tipping point in a conservation decision may be a conversation with a landlord or a communication with the local grain buyer such as Frito-Lay, who either favors or discourages a particular practice.

Identifying the sources of power and influence in the system and the process through which farmers come to conservation decisions adds another dimension to the understanding of conservation decisions. Even when all of the variables are carefully identified and the methods are painstakingly developed (Addison, et. al., 2013), attempts to model conservation adoption decisions assumes that an aggregate snapshot at a given moment is predictive of the future. We found that although farmers are expert at scanning the system in which they operate and that they use a shared language to describe their decisions, decisions are often singular. This rather situation-specific dynamic quality of decision-making at which family farmers excel makes a durable predictive model for conservation decision-making elusive.

Last, there were a number of functional challenges to the implementation of conservation practices. While they were not the focus of this study, they are important. Adoption of conservation practices increased operational complexity: a temporary risk to yields and profitability presented by the implementation learning curve, pressure on already scarce time, labor caused by additional trips over widely dispersed land, and a lack of required equipment. Addressing these functional challenges would likely not have an immediate impact on the tepid support that many farmers expressed for conservation. But, in combination with incentives, it could smooth the way to implementation, especially for farmers who have a low risk tolerance.

Recommendations

Further research to explore in more depth on how cover crop awareness developed among commodity farmers over time would be useful in understanding the adoption process. How do conservation narratives and practices come to be accepted in the system where they are peripheral to the input-output based patterns of commodity agriculture and when advocacy comes from sources viewed as less than trustworthy?

The farmers' narratives revealed only a hazy "snapshot" of how farmers perceived the system of industrial commodity agriculture and their position within it at the end of 2019 and in early 2020. While we have emphasized the dynamic nature of commodity agriculture, we also note that the sources of power and influence in the system were in place before our study and are likely still in place. Though these forces will likely continue to drive consolidation, their effect on individual farms and farmers may be more nuanced. There may be opportunities for family farmers and educators to work together to discover opportunities and mitigate limitations created by the system.

Several recommendations for educators looking to encourage conservation practices include:

- Establishing personal relationships with farmers may help to increase receptiveness to conservation practices.
- Including farmer presenters who have hands-on experience and a personal stake in the outcome of the conservation practice.
- Discussing the learning curve needed for the implementation of conservation practices and exploring tactics for mitigating risk during the first several years, not just the first year.
- Offering multi-year incentives to farmers, especially those with low risk tolerance.
- Linking farmers to the needed inputs and equipment.

Our final recommendations are in the form of questions: 1) Could educational programs encouraging transition to conservation practices be more successful if they more accurately reflected the language and values of farmers' identity vs. the perspectives and preoccupations of educators? 2) Given the sources of power in the system of industrial commodity agriculture, could conservation practices assist farmers in maintaining their land base as farmland consolidation continues?

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