



Negotiating agricultural change in the Midwestern US: seeking compatibility between farmer narratives of efficiency and legacy

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Abstract

Agroecosystems in the Midwestern United States are undergoing changes that pressure farmers to adapt their farming practices. Because farmers decide what practices to implement on their land, there are needs to understand how they adapt to competing demands of changes in global markets, technology, farm sizes, and decreasing rural populations. Increased understanding of farmer decision-making can also inform agricultural policy in ways that encourage farmer adoption of sustainable practices. In this research we adopt a grounded view of farmers by interpreting their decision-making through their stories of everyday life. We use a narrative analysis to identify recurrent themes that characterize farmer decisions as active negotiations between the demands of efficiency in maximizing crop yields with a desire to steward land through past, present, and future generations. Together these narratives portray farmer decisions as a place-making process that seeks compatibility among distinct aspirations for their land.

Keywords Sustainable agriculture · Place meanings · Narrative analysis · Midwest · Farmer decision-making

Introduction

The global agricultural industry has continued to evolve in recent decades in ways that have affected farming lifestyles at the local level. Farming practices have adjusted not only to changes in the industry but to other dynamic forces in their communities and landscape (Prokopy et al. 2020). Advances in farm technology and shifting economies of scale favor large-scale operations (King 2017; Key 2019), which have been accompanied by declines in population of many rural communities of the U.S. Midwest (Peters 2019) alongside other changes in rural public health and community well-being (Polèse and Shearmur 2006). Increasing concerns in the scientific community are the risks posed by global climate change to the long-term health and functioning of agriculture (Fischer et al. 2002; Pryor et al. 2014). Faced

by this dynamic set of changes, one may be left wondering how farmers make sense of the many forces of change and pressures confronting their decision-making.

A well-developed line of research has examined the economic benefits of farming, and framed farmers as engaged in a production-oriented process to maximize yield and minimize costs (Ranjan et al. 2019). Other research has recognized that economic forces shape farmer decision-making, yet also has humanized farmers with aspirations for their family, community, and sense of place with their farm (Carlisle 2016; Peterson et al. 2012; Prokopy et al. 2020; Reimer et al. 2012). An interdisciplinary body of research has assembled concepts and evidence in ways that suggest farmers care about land stewardship (Ryan et al. 2003; Yoshida et al. 2018), enhance soil health of their farm (Carlisle 2016), and conform to regional norms of being a good farmer rooted in a sense of morality (Coon et al. 2020; McGuire et al. 2013). Other researchers have indicated that rural lifestyle and identity (Shipley et al. 2020; Salamon 2009), community heritage (Strauser et al. 2019; van Berkel and Verburg 2014) and wildlife habitat (Yoshida et al. 2018) are ways that farming contributes to the social fabric of rural communities. Despite the varied and complex forces of change that farmers face, they navigate decision-making in their day-to-day life and do so in ways that are

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not yet fully understood. Building on previous research (e.g., Davenport and Anderson 2005; Ngo and Brklacich 2014), in the current study we sought to develop a place-based context to understand farmer experiences within their day-to-day decision-making about agricultural practices.

To ground our approach in the perspectives of farmers, we developed a narrative analysis that takes advantage of stories as a natural and unrehearsed style in which people describe their unfolding experiences with one another. Through our interactions with farmers, we came to understand their perspectives through the sharing of stories that embeds their decision making in the value it brings to their lives. This process enabled us to interpret how they connected seemingly disparate goals, actions, and events of everyday life (Polkinghorne 1995; Sharp et al. 2019). Our analysis of their stories involved the construction of recurrent narratives consisting of a beginning, a middle and an ending point, technically labeled as an orientation, complication, and resolution (Riessman 2008). The *orientation* was the start of the story that identified what the story was about. The *complication* was the middle of the story, and identified the major events of the story, including a turning point, crisis, or problem. The *resolution* was the conclusion of the story, detailing how the complication was resolved or anticipating a solution. Through the process of creating stories, new understandings were gained by contextualizing and creating relational significance among potentially distinct events (Polkinghorne 1995; Sharp et al. 2019). A narrative analysis was an ideal approach to develop a grounded understanding of how farmers made sense of the many forces of change in which they engaged.

Place-based contexts for conservation planning are centered on place-meanings and their capacity to express social and emotional connections to environments (Davenport and Anderson 2005; Ngo and Brklacich 2014; Manzo 2005; van Riper et al. 2016). Barkley and Kruger (2013) indicated that emotional aspects of place have a sociological component in that “feelings arise directly from the lived experience [of place] and sentiments associated with sharing them with others” (p. 92). By expressing place-meanings, people communicate and effectively ‘give’ these feelings to others, thereby allowing a wider community to engage with the emotional field of their place experience (Denzin 1985). Commonly understood feelings confer the essential meanings of place and are embodied in the stories we tell about our lived experiences. Barkley and Kruger (2013) characterized the approach of land management agencies as being overly technical to the point of excluding emotions in planning; in response, they developed a strategy centered on stakeholders’ place meanings shared through stories of lived experience. They emphasize the need for stakeholders to express “*how* they feel about places rather than *why* they feel a certain way” (p. 94). An important part of describing

how one feels about a place, is to imagine what the place could become, and re-imagine what it has been (Strauser et al. 2019). To this extent, sharing stories of place holds the potential to create common aspirations for what it can (or should) become (Cresswell 2014).

Although a significant body of research has humanized farmers and the decisions they make about agricultural practices, less is known about the influence of emotions on how farmers think and act. An emerging line of research has indicated that positive emotions, specifically feelings of pride, honor and respect underlie farmer behavior (Schneider et al. 2017). However, the extent to which pride, honor, and respect relate to farmer decision-making about agricultural practices is still unknown. With farmers being in a continual state of place-making, this paper draws on their aspirations for themselves, their families, and their memories of generations past. By sharing stories of place, we adapt a narrative analysis to understand the ways in which farmers negotiate the tensions and pressures of contemporary forces of change that affect everyday decisions. Given that concepts of place and emotions are critical for bringing coherence to our analysis, we focus particular attention on stories of lived experiences to identify recurrent narratives of place and emotions on the farm.

Methods

We initiated this research by conducting face-to-face interviews with farmers and developing an appreciative dialogue about their way of life in a rural agricultural watershed (Ranjan et al. 2019). Through these interviews we observed recurrent themes in farmers’ stories of their daily experience and employed narrative analysis (Polkinghorne 1995; Riessman 2008) as a useful process to interpret these themes.

Study site

Our research was conducted in the Kaskaskia River Watershed found in the state of Illinois, United States. About 82% of land is devoted to agricultural use which is slightly higher than for the whole state of Illinois (78%). Most farmers of the watershed are above 50 years old, and own family farms passed on to them from earlier generations. Roughly half of the farmers are also engaged in off-farm jobs, relegating farming as their secondary occupation (IDA, 2021). Most farmland soils are tilled using conventional farming methods, typical of industrial agricultural practice, so agricultural runoff causes significant loss of topsoil and nutrients (especially nitrogen and phosphorus) contributing to downstream pollution and sedimentation (Sloan et al., 2018). Along the river are two large United States Army Corps of Engineers reservoirs and the lower 58 km of the river is authorized

for navigation purposes to transport materials. These bodies of water are instrumental in shaping how residents understand and interact with places in the watershed. While predominantly a rural context, with an estimated population of 440,000 living in the watershed (U.S. Census Bureau 2010), there are several larger population centers located within 20 km of the watershed boundary (i.e., the St. Louis metropolitan area of Missouri-Illinois and both Champaign-Urbana and Decatur, Illinois). More than 50% of the farmland in the Kaskaskia River watershed is rented, and on a per county basis ranges from 38 to 82% farmland that is rented (USDA 2017 Census of Agriculture).

The region provides a range of contributions from nature to human communities, but also faces risks that threaten the stability of the system. A major benefit of the watershed is the provision of corn and soybean crops that are cultivated on 57% of the land, while pasture and hay crops are grown on 13% of the land (Homer et al. 2015; Metzke and Hinz 2017; Fig. 1). Other benefits of the region include the provision of resources for water supply, flood control, wildlife habitat, recreation opportunities, tourism, scenic beauty, and spiritual relief (Shipley et al. 2020). Threats to the system include commercial and residential demand, decreasing

economic opportunities, erosion, sedimentation, and chemical run-off. These threats and benefits have been recognized by local communities and provide a basis for discussion about management at the local level (Acero Triana et al. 2022). In particular, the Kaskaskia Watershed Association (KWA) is composed of eight different coalition groups that are highly engaged and unified to develop and implement a comprehensive strategy for restoration and management of the watershed. The communities represented by the KWA have a longstanding history of engagement in management that served as a trusted platform for successful implementation of this research. The pre-existing social capital illustrated by the association provided an ideal context to understand the complexities of farmer decision-making alongside tensions about the use of an amenity rich landscape.

Interviews

Our study of farmers was part of a larger project that engaged stakeholders and community leaders from across the Kaskaskia River Watershed. For this paper, we focus on the semi-structured interviews with current and retired farmers. Our sampling technique was to identify interviewees occurred in two stages. First, we invited farmers to be interviewed based on their participation in a previous analysis that was conducted with key leaders and experts in the watershed (Leitschuh et al. 2022). After interviewing an initial set of farmers, we sought to balance our sample based on characteristics tied to gender, age, and location of farmland in the watershed. Specifically, we sought to identify farmers who were relatively young, women, or farmed in areas of the watershed where we had not yet interviewed farmers. Our final sample was purposively constructed to represent farmers on the watershed with sensitivity to gender, age, and geographic location of farm (Guest et al. 2006; Marshall and Rossman 2014).

Overall, we conducted interviews with 17 people who were either farmers ($n = 13$) or retired farmers ($n = 4$). The amount of time dedicated to interviews ranged between 57 and 122 min in length and often included a tour of the farm operation and property and took place from August 2017 to January 2020. Our sample was predominantly male ($n = 14$). Our interviews followed a protocol that consisted of questions that encouraged interviewees to recount different narratives of lived experiences and to share their stories that contained meanings and emotional sentiments associated with those experiences. Given that both emotions and place meanings are often deeply personal, participants may be unwilling to reveal their true feelings, experience difficulty in communicating their emotions, or be unaware of the specific emotions they associate with an experience (Saldaña 2015). Therefore, we directed special attention to building relationships with our interviewees through various avenues

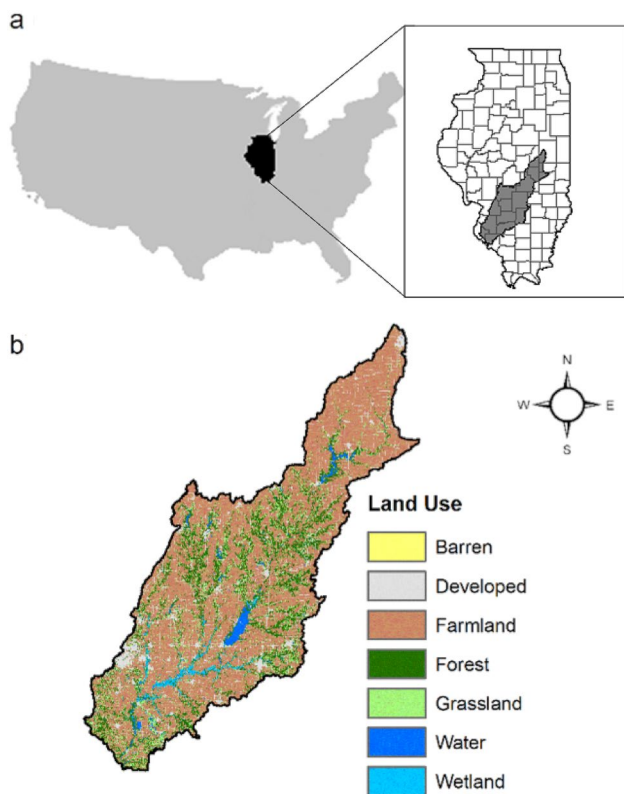


Fig. 1 Boundary and features of the Kaskaskia River Watershed: **a** border of the watershed within the state of Illinois in the United States, **b** features of the watershed by land use. Figure created by Juan Sebastian Acero Triana and Dana Johnson

(e.g., connecting on several occasions before the interview, sending the questions in advance, meeting them on their farm or other relaxed setting, and empathizing with them during the interview) to create a comfortable environment for the interview. We also asked follow-up questions to probe and build an appreciative dialogue around interviewees' lived experience to encourage further elaboration on their meanings and feelings. Other questions we asked explored the types of agricultural practices that farmers used on their land, other types of stewardship focused behaviors, as well as their perceptions of these behaviors.

Analysis

The purpose of our analysis was to deepen understanding of how participants negotiated changing demands on farming and farmland in ways that engaged their decision-making about place meanings and emotions. That is, we examined farmers' stories of lived experience to identify whole and partial narratives in which they described aspects of their life, explained their farming practices and other behavior with their land, and justified their actions (Polkinghorne 1995; Sharp et al. 2019). We then sought to build coherence across these narratives by searching for common thematic elements in stories (Riessman 2008) where farmers discussed their decision-making in relation to an expressed desire or realized action that altered or maintained their land. Following traditional structures of narrative analysis (Riessman 2008), we organized participant narratives into three elements: orientation, complication, and resolution. The orientation of each narrative was framed around the place meanings that farmers expressed in their stories, positioning place meanings as the set up for each narrative. The complication to these narratives was framed around tensions associated with changes that disrupt the nature of the place meanings and the emotional reactions to these tensions. Lastly, the resolution to these narratives was organized around how farmers negotiated the tensions among their desired place meanings, the emotions embedded in these places, and their decision-making.

The methodological sequence of our narrative analysis included identifying stories associated with change or farmer decision-making then identifying thematic narrative elements presented in these stories. Prior to analyzing our data, we transcribed all interviews verbatim. We started our coding process by open coding which involved descriptively labeling the entirety of the text. This process was undertaken by the first author and an additional research assistant. All relevant features of the text that related to place meanings, emotions, or farmer behaviors were then coded to identify the narrative story elements that were present. This latter coding process was conducted simultaneously by the first and second author to ensure consistency in coding; an acceptable level

of intercoder reliability of 86% was achieved (O'Connor and Joffe 2020; MacQueen et al. 1998). Through our analysis we identified recurrent themes across transcripts that were ultimately represented by two narratives. That is, through our process of interviewing farmers and analyzing our data we found that while the specifics of farmers' stories and experiences were diverse, recurrent themes fell into one of two narratives. Through this process we challenged ourselves to understand the distinctions and similarities across farmers who shared a similar lived experience.

Findings

Through our analysis of the transcripts, we identified two recurrent narratives. These two narratives both explained relational significance of place meanings and emotions within farmer's daily lives about how they negotiated tensions of change in their decision-making. Within each narrative was an orientation to their place meanings, a complication involving a change or threat to meanings and the emotional reactions to these changes, and finally an actualized or idealized resolution that negotiated the complication.

The first narrative we identified in farmer's stories was connect to the place meaning of efficiency, which emphasized the commodity and economic value of place. For some farmers, the efficiency narrative was expressed in analytical and economic terms, reflecting decisions to reduce costs and maximize yields. Other participants expressed that efficiency could also align with stewarding the land to maximize long-term efficiency.

The second narrative that we identified was directed at place meanings of family and farm legacy, which emphasized the non-commodity value of place. For many participants, the narrative of family and farm legacy was expressed as a way of justifying decisions and land use practices focused on respecting the past and continuing the farm into the future. This narrative emerged from farmers who articulated a desire to maintain or continue family traditions that they learned from previous generations, as well as meanings associated with practices that were adopted to steward the family farm for future generations.

The efficiency narrative.

Like I said, you're trying to do anything and everything to try to maximize the profit potential of each and every acre and utilize your inputs to the most efficient way.

Orientation: farming is a livelihood and decisions are driven by the bottom line

The efficiency narrative is oriented around the premise that farmland should be used to maximize the production of farmland commodities (e.g., corn, soybeans). For many farmers, this narrative was hallmarked by notions of the

bottom line, for example one farmer expressed “It comes down to profitability. [Farmers] are all trying to maximize their profits and minimize their costs. That’s the bottom line on it.”

In this narrative, different orientations were identified based on how farmers connected efficiency in relation to stewardship and sustainability. Some farmers expressed that to be efficient is to take care of the land “you know...the better you treat the land the more it produces for you. It is very simple... you want to abuse it? It is going to abuse you. So, it is very simple.” This perspective implied that enhancing the long-term production of the land benefits efficiency and that a lack of sustainable practices will result in decreased efficiency.

Another orientation in this narrative was that farmers may have been more interested in short-term monetary gains rather than long-term efficiency. Many farmers we interviewed indicated that a mindset focused on short-term gains had a negative impact on the land as one farmer expressed “what happens with the big commercial farm. These guys that are going out operating a very narrow margin but just on volume. Is that they will rape the land. I mean they will not keep it up like they should.” However, the depiction of farmers as abusing the land and being disinterested in conservation was contested by another farmer who argued “[sustainable practices] are one of those things that requires additional management, which doesn’t always lead to additional returns on your investment. You know, a lot of research shows you initially may break even, so you are asking a farmer to do something that requires a lot more management for not much return, that can be tough sometimes.” This second perspective suggests that farmers who appear to be more focused on short-term monetary gains may still desire to steward land but face economic pressures that inhibit their ability to do so.

Complication: changes in markets, technology, and climate influence farmer decision-making about agricultural practices that maintain or enhance efficiency

One complication that emerged from our analysis of the farming efficiency narrative was related to changes in markets. For example, one farmer discussed how decisions to plant acreages of corn or soybean was influenced by price ratios and changes in international trade deals, which reduced the price of these products and lowered margins, as illustrated by the following passage: “the reason why we had an increase in soybean acres this year was because that cost ratio. And now because of the tariff talk beans have lost a lot of their profit. In May [soybeans] were close to \$10 dollar a bushel and with all the tariff talk now [in July]

beans are around eight something.” The effects of market volatility were directly linked to farmers’ adoption of certain practices with one farmer noting that “in profitable years you see [farmers] do things, more of those sustainable practices, when it gets leaner they kind of cut back. When you have \$5 corn you can do a lot more than you can when it’s \$3 corn.” To maintain efficiency and compete with global markets, farmers faced an immense pressure to adapt quickly, often promoting short-term decisions.

Coupled with increasing pressures to minimize costs was the adoption of newer technologies such as larger equipment “The equipment is just so big. I mean you can cover so much acreage so fast now.” These changes have been associated with an increase in farm size due to pressures of low profit margins “they will bid up land. They need the volume and they will bid up the rent cost that most normal farmers they can’t match it because it doesn’t pencil out. The only way it pencils out is volume. That is what makes that work and that is why you see more of these bigger farms.” The buying up of farmland and farming large volumes on low margins is framed as a challenge to sustainability as one farmer explained “Really narrow margins but a lot of acres and there is a lot of those people out there that are really the culprits when a lot of the problem we are having in terms of water quality, erosion, um over use of pesticides all that.” Some farmers associated these changes with deep feelings of pride that ran counter to sustainability “Conservation versus my bigger tractor. I mean as far as I am concerned, it has been that way for 20 or 30 years...the more acres I farm the bigger equipment I have. The better farmer I am...ego.” However, changes in technology can result in benefits to both efficiency and sustainability such as variable-rate technologies as one farmer put simply “we’re not doing these general 300 lbs. per acre. Yeah we might put 150 here and we might put 400 over there.” This change in technology benefited both efficiency and production by limiting how much fertilizer was wasted, saving both money and reducing run-off.

A final topic discussed by farmers was changes in weather patterns. One farmer expressed that “You know, instead of getting ten half-inch rain falls in a summer, we are now getting one 10-inch rain fall at once.” Major rain events posed a threat to a farmer’s production and promoted short-term decisions such as what one farmer noted as “the overall attitude that we gotta get rid of the water as quick as we can.” Moving water quickly off farmland is vital to harvesting a crop but can result in loss of soil and nutrients overtime (Schwab et al. 2021), further indicating how changes and variability in weather complicate the decisions that farmers have to make to balance short-term gains with long-term production.

Resolution: explore solutions to maximize short and long-term efficiency of agriculture practices

Farmers discussed the decisions and agricultural practices that could be implemented to adapt to changing markets, technology, and weather while maintaining production. The first discussion point was an idealized solution for farmer adoption of sustainable agricultural practices to increase both short-term and long-term efficiency. For example, one farmer discussed the benefits of using winter cover crops noting “cover crops, one of the main benefits is increased soil health, but that takes a few years. But the initial benefit is better water infiltration and better water holding capacity” going on to note that cover crops help reduce the negative impacts of increased rainfall “those four-inch rains are causing a lot of damage to our land and if it is not protected with residue you are losing a lot of soil.” For the farmer who interprets efficiency in terms of stewarding long-term production, sustainable practices like cover crops were an effective resolution.

Despite benefits of practices such as cover crops, sustainable agricultural practices are not universally effective and have associated costs that hinder adoption. As one farmer notes, “I think they are gonna start backing off cover crops. They tried cover crops, not me, but some other farmers. We aren’t going to do this unless we can see some economic advantage or some crop health advantage and weren’t seeing it yet.” The initial cost of some practices was difficult to overcome in an industry dominated by thin margins. Therefore, an outcome for some farmers was to engage in practices that maximized profits by chasing short-term market trends. One farmer explained that high corn prices in the late 2000’s due to the ethanol boom resulted in many farmers planting “corn on corn acres for several years because it was more profitable” despite the long-term negative impact on soil health by planting corn on corn acres.

As introduced in the orientation of this narrative, some farmers pushed back against the narrative that farmers who do not implement sustainable practices are disinterested in stewardship, arguing that “farmers are very conscious of trying to be sustainable, but you got to be able to make a living. I mean that is really important. You are not going to be idealist and not be able to support yourself.” Building upon this position, another idealized resolution was to understand the basis for farmer decision-making as that of efficiency through maximizing the long-term sustainability of farmland. This idealized solution complemented the farm and family legacy narrative discussed next.

The farm and family legacy narrative.

There has always been a concern of farmers, you bought the farm or had the farm given to you by your

parents or grandparents. You want to give it to your kids and your heirs, that they can continue the legacy that has been laid out in front of you.

Orientation: farmers invoke an emotional state related to honor, respect and pride that emerges from the viability of stewarding land, while decision-making is driven by ownership of the family farm, passing land from one generation to the next, and creating opportunities to continue a way of life associated with farming

The farm and family legacy narrative is deeply interconnected with long-term viability of the farm. It is a narrative that emphasizes the non-commodity values and meanings associated with continuing a legacy of family inherited land, keeping the farm in the family, and perpetuating rural family values as the basis of decision-making. For many farmers this narrative was associated with owning land that was inherited from previous generations and framed as a basis of stewarding land. As one farmer explained “You see the benefits of [conservation practices] and realize that you want to continue that, that is important to you, so that you can pass the farm onto your sons and daughters or grandsons and granddaughters.” Another farmer asserted with great pride that he was a multi-generation farmer “I am like a sixth-generation farmer. Um, started back in, I was trying to do some research, I could, I can go back to the 1870’s.” The broader context surrounding these comments underscored the emotionality of this claim and sense of commitment the farmer wished to convey in his claims. Just as a sense of farm legacy honors the inherited land, it also is forward looking and focused on stewarding land to better ensure the legacy can be passed along to the future generations.

Through a sense of ownership many farmers equated a sense of responsibility to the future of the land as a way of respecting and honoring a past legacy. One farmer suggested that a desire to honor the past by stewarding the land was a motivator to use sustainable practices, indicating that “we would call soil health champions, these farmers that are doing all of the conservation cropping systems...you know they are doing no-till, nutrient management, and cover crops. They typically own all of their land.” For some farmers, the meanings of legacy and ownership justified the implementation of sustainable practices because the long-term benefits offset short-term risks due to added value for family lands. One farmer framed his decisions to use sustainable practices in terms of risks and ownership “I used cover crops specifically on the land that I own and I am willing to take more risks on the land that I own. I am willing to do a management activity that is going to possibly break even more so than on the land that I rent.” However, the notion that a sense of farm legacy is synonymous with ownership was

challenged by one farmer who commented on farmland they rented, offering that “We rent most of our ground, but we still treat that land like it is ours.” This alternative perspective suggests that while landownership may be a basis of place meanings associated with legacy and can serve as a powerful motivator to engage in stewardship behaviors, the narrative of a farm legacy is not restricted to owning land.

While legacy was directly associated with inheriting and stewarding land, farmers also orientated their narratives of legacy around stewarding their land and places as a desire of continuing a way of life associated with rural lifestyles, community values, and a farm family. The notion that farming is valued because it is a way of life was mentioned often, with one farmer saying that “agriculture to me is an emotional thing. It’s something that I feel very deeply about, um in all senses. Whether we’re talking about the specific piece of land where I got to get solace or have fun or get fit. But, it’s also my way of life, so, it’s an emotional thing.” With this statement, the interviewee adopted an emotional position that illustrated their connection to the land and its history. Other participants discussed their legacy in terms of friends and family with one farmer mentioning “growing up in the rural lifestyle is, it is a lot about family and friends.” Another farmer reflected on how his own passion for farming came from his parents “I am fortunate to see my grandparent’s passion for farming, my dad’s passion for farming...without even knowing it, it just happened to me.” Ultimately participants oriented their desire to steward their land in line with Peters’ (2019) notion of bridging social capital, because the meanings of legacy were associated with places through their emotional bonds to family, friends, and community.

Complication: pressures from agriculture intensification, changes in rural populations, and resistance to change threaten the farm and family legacy, as well as complicate farmer decision-making

Just as owning land was perceived as the basis for a desire to steward a legacy, some farmers posited a decline in land ownership and rise in tenet leasing as direct opposition to the narrative of legacy. One participant stated that most farmers who lease land are focused on the short- rather than the long-term timelines: “when you’re looking at it year to year and trying to figure out if you’re gonna be able to afford to keep farming in the next couple years, you may not be looking at the 10 year plan.” This perspective was shared by another farmer who directly associated tenant farming and lack of ownership with farmer behaviors that improved production with little regard for conservation “you need to be interviewing some of these bigger tenant farmers. Because they do not have any ownership. They are farming for somebody else in Chicago. Economics is more important to them

then conservation or the watershed.” The growing decline of farmers who own their land complicated the narrative of continuing a farm legacy. That is, a shared belief among many farmers was that without a farm legacy to continue then the motivation to farm becomes focused on the commodity value, rather than the long-term viability of the land.

In addition to declining land ownership, other changes associated with agricultural intensification complicated farmers’ ability to use practices that steward the land in ways that continue farm and family legacy. As identified in the complication to the efficiency narrative, there is much pressure on farmers to acquire land to compete with thinning profit margins. One farmer voiced that “it does concern me you know. You know farms are getting bigger, costs are going up, s, opportunities aren’t readily available sometimes.” The lack of opportunity was directly connected to a decline in the ability for farmers to feel they could pass along the land to the next generation. The same farmer expressed concern for his 15-year-old son, exclaiming “it also concerns me...is there going to be enough for him to come back to, is there going to be an opportunity for him to farm?” While some farmers indicated a desire to implement sustainable practices on their land for future generations, some lamented that the same practices resulted in less work and less opportunity with the same farmer further expressing that “I don’t do any fall tillage, so once harvest is over, we don’t have a lot left over to do after we get the cover crops planted. And so he actually has to go work for a friend of mine that still does a lot of tillage.” For this participant there was much tension between implementing sustainable practices on his land to ensure the health of the farm for the next generation, yet these practices also limited the work that needed to be done, both enhancing the long-term while reducing the short-term opportunity for his son.

A final complication was directed at a resistance to change associated with farming the land in ways that honor a farm legacy, traditions, and customs of farming. This sentiment was captured by farmers who explained “everything is about what dad or grandpa did” and that the previous generations resisted adopting different practices: “you know both of my grandparents came from family farms and had a vision of how the land should farmed. When they drove by [my land] and saw something different being done it could be a challenge.” The notions of what constitutes stewarding the land was further complicated by an older way of farming, with many farmers noting that previous generations viewed taking care of the land as “they want things to look nice, they want things to look clean,” a sentiment shared by another farmer who said, “in their eyes, being a steward of the land is making it look clean and nice.” However, sustainable agriculture practices such as reduced tillage leave residue on the surface of the land which some farmers viewed negatively: “you know, she would see that

residue and call that trash out there.” Habits, traditions, and normative assumptions about how to farm grounded within a sense of farm legacy presented challenge for encouraging the adoption of practices that enhanced viability of the farm, best summarized by one farmer who said “you are trying to bust through hundred years of generations, to try and change their way of doing business. Nobody likes to be told what to do and especially somebody that has been set in their ways for a hundred years.”

Resolution: continue adoption of sustainable practices and explore solutions that add value and create opportunities through land stewardship

Farmers explained how they adopted sustainable agriculture practices as a mechanism to negotiate tension between production and conservation. This final resolution aligned with the way sustainable practices were connected to the efficiency narrative; the adoption of practices that sought to maintain production minimized negative environmental impacts and promoted health of the land. Farmers expressed that the adoption of sustainable agriculture practices added value to the family farm by symbolizing to the next generation how to care for the land “My grandchildren, [the land] will be theirs. When they come by, we go over to the farm and then we talk about the farm. About what my practices are. I show them my cover crops. I show them the filter strips. And we got to preserve this.” Similarly, the same farmer who expressed concern that using sustainable practices limited opportunities for his son, justified his use of sustainable practices on his land through a long-term desire to leave something for future generations, as he indicated “I would not be doing a lot of what we are doing if we did not have someone else to pass it on to. Why work this hard and do stuff with nobody to give it to?” However, while some farmers justified the adoption of sustainable practices through their sense of responsibility to the land they own and a desire to enhance health of the land for the next generation, the adoption of these practices may be limited by a lack of land ownership and resistance to change, indicating other solutions may be needed.

An idealized resolution to the complications of declining land ownership was to incorporate language into lease agreements that would require farmers who rented the land to use conservation-focused practices. One farmer discussed that “there needs to be a change in the way these leases are written. Leases that are written to include conservation. Not only profitability and sustainability, but use conservation to achieve these two things.” By adjusting the agreements to include conservation and cost-sharing policies it was argued that “if we were able to talk landowners into more long-term lease agreements that included conservation then both parties are taking the same amount of risk. While right now all

the risk is on the farmer and none on the landowner.” By sharing the cost of sustainable agriculture practices in these leases, it would hypothetically reduce the financial burden and risk of experimenting with a new practice. By promoting more farmers to engage in practices that enhance the viability of the land they rent, that process creates a meaning of legacy and responsibility for the land, best reflected by one farmer who rented much of his land “We rent most of our ground, if we go do a big waterway project and it gets blown out because it rains too much, that makes me sick even though it is not my ground because we put all that time and effort in.”

Another resolution expressed was utilizing farmer to farmer education and programs that would promote the visibility of conservation practices among farmers to help shift the norms of what constituted land stewardship. As one farmer explained, “I think it is our job as farmers to help educate, you know, others about what we are doing and why we are doing.” Similarly, others talked about the need to promote more peer-to-peer interactions, as one farmer noted “It is really hard to be first guy in the township to be the one to do the cover crops,” yet at the same time another farmer explained that other people were influenced by their peers: “there is peer pressure to keep the soil on the land, to change your farming practices.” Building upon the notion of farmer-to-farmer information sharing, many of the farmers we interviewed were aware of a program enacted in 2018 called the “Saving Tomorrow’s Agriculture Resources” (referred to as STAR). This program was a voluntary self-certification program that provided farmers an opportunity to evaluate the practices implemented on their different sections of land and assign a one to five-star rating to each section, with five stars indicating commitment to a suite of sustainable practices. By tapping into existing networks of programs that help promote education of farmers by farmers, the interactions hold potential to shift the perceived normative traditions of stewardship that are deeply rooted in a sense of farm legacy.

Discussion

The purpose of this study was to understand farmer decision-making as a place-making process. We did this by interpreting stories of farming practices through a narrative analysis that positioned concepts of place meanings and associated emotions as the orientation, complication, and resolution. Through this analysis we identified two recurrent narratives, the first of which linked farm practices to efficiency. In line with previous research, farm decisions were driven by an interest in building larger farming operations and adapting new technology to expand profit margins (Key 2019; Ranjan et al. 2019). That is, farmers justified their practices to remain competitive against complications such as changes in

markets, technology, and climate. Interestingly, within this same narrative, farmers expressed that efficiency could also be framed as the long-term ability of land to produce. These individuals indicated that adoption of sustainable agricultural practices was an ideal solution to maintain production while minimizing environmental harms and adapting to change (German et al. 2017; Hobbs 2007). However, the widespread adoption of sustainable practices will remain limited because these practices may not be universally effective and can have initial or upkeep costs that some farmers are unable or unwilling to pay, indicating a need for other solutions.

In the second narrative, farmers justified their decision-making in relation to place meanings of family and farm legacy. This finding aligns with previous research indicating that farmers have a deep sense of heritage, identity, and lifestyle with the land they farm (Ryan et al. 2003; Strauser et al. 2019; Yoshida et al. 2018; Ngo and Brklacich 2014). Farmers explained their willingness to adopt sustainable practices through land ownership. That is, farmers negotiated the short-term costs imposed by sustainable practices with the perceived long-term benefits of responsibility to the land they owned. For many farmers, the land they owned was inherited and they expressed a desire to leave it better for the next generation. Farmers further negotiated the adoption of practices that may incur higher costs if the health of the land was maintained and could be left in a better condition for the next generation (Chiswell 2014). While for some farmers the desire to perpetuate a family legacy was associated with adopting new practices, for others, the desire to honor a family legacy was associated with a resistance to change. Because of the challenges associated with resistance to change and complications from declining rates of small family farms in the Midwestern U.S. (Bigelow et al. 2016; Peters 2019), several farmers suggested other idealized solutions that could tap into meanings of legacy. In particular, farmers expressed that landowners should incorporate more language in lease agreements to share the burden of costs associated with sustainable practices to promote more adoption and that farmers should engage in more peer-to-peer education to shift the norms of what constitutes sustainable agriculture (Coon et al. 2020). Given that both of these idealized solutions have been discussed in previous research as strategies to promote sustainable agriculture practices (Barnett et al. 2020; Stuart et al. 2018), this study provides corresponding implications that additional research and action should be directed towards integrating conservation practices in agricultural communities across the Midwestern United States.

A surprising finding was widespread awareness, and deeply felt emotions, of the farm and family legacy narrative. In fact, all but two farmers shared stories reflecting the tension between maximizing yield and concern for the future

of their farm and family. This unexpected result may be due to three inter-related reasons: (1) The larger research project had engaged a wider spectrum of stakeholders and identified net profits and maximizing yield as a primary explanation for agricultural decision-making (Shipley et al. 2022). (2) We were influenced by literature directed at understanding behavior change of farmers. The dominant approach in this line of work has been tied to psychological processes, with theoretical framing of farmer decision-making associated with a cost–benefit analysis motivated by incentives for behavior change (see Ranjan et al. 2019 for a thorough review). (3) The final reason for surprise at the prevalence of farm and family legacy may be the commonly accepted cultural narrative of farm progress becoming more efficient due to advances in the agricultural industry. When asked about reasons for practicing farming the way they do, most of our interviewees would lead-off—almost without thinking—with maximizing yield and net profit. However, with further prompting, our interviewees elaborated a much larger context that farming is their “lifestyle choice” knowing they will “never get rich” coupled with a deep-seated care for their family legacy and future viability of their farm (cf., Yoshida et al., 2018). If not for caring about their family and farm legacy, the interviews would have been shorter, emotionally flat and routine, with outcomes neatly aligned with previous literature.

Why did our study result in a comparatively complicated set of outcomes compared to past research? To be sure, there are several streams of research on agricultural practices that suggest farmers act on an array of human values (Yoshida et al. 2018), maintain their sense of place with their land (Davenport and Anderson 2005), and embrace a unique social identity (McGuire et al. 2013). The starting point for this research was directed at understanding farmers’ perspectives of place and perceptions of landscape change. Although we asked questions about behavior change and the implementation of sustainable agricultural practices, we stepped-back from any such agenda in favor of developing a trusting relationship with those we interviewed with the purpose of creating rich descriptions of their lives. In retrospect our in-depth interview process—where we met twice with each farmer as an introduction, often took a tour of their farm property, and then conducted a follow-up interview for recording—built trust and allowed for expressions of vulnerability. Our interview context created a safe space for interviewees to characterize their decision frame for choice of farm practices, and to fully explain their positions and life contexts. In doing so, farmer narratives disrupted alignment with the dominant discourse of agricultural progress, which was not an intentional strategy nor articulated as part of the research design.

Across both narratives we found that emotions of pride and feelings such as respect and honor were deeply

intertwined with how farmers understood and negotiated change. Many farmers expressed a feeling of honor and responsibility in providing food to the world. Farmers also expressed a sense of dignity in being good stewards of the land. However, these feelings were also associated with a sense of respect in following traditions and maintaining land in a manicured way that may be considered unsustainable. That is, farmers with a sense of honor in following family traditions may follow norms such as tiling fall stubble into the ground or mowing ditch rows, practices which are not considered sustainable but are deeply ingrained norms in midwestern farming (Ryan et al. 2003). Sentiments of pride, honor, and respect implied membership of a social community of others (Cernea 2008; Salamon 2009) with implications directed at social change rather than behavior change. Farmer-to-farmer learning holds promise for social change coming from within the farming community due to a realignment of farmer social identity as reflected in the appearance of one's farm (McGuire et al. 2013; McKim et al. 2019). Rather than a "clean farm" as the community-based expectations for appearances of one's farmland, farmer-to-farmer dialogue could shift aspirations for farmland aesthetics to align with crooked stream channels, increased crop diversity, stubble residue left on top, and perennial strips mixed into fields (Burton 2004; Morse et al. 2014). Solutions such as farmer-to-farmer education may be an effective method for promoting social change to take advantage of power dynamics from within the farmer community, rather outside experts trying to "educate" farmers to change their individual behavior (Grudens-Shuck et al. 2003).

Conclusion

Agroecosystems in the Midwestern United States have experienced much change and farming conservation practices have shifted as a result. Despite the many dynamic pressures, farmers negotiate these tensions in their everyday decision-making. In context of the Kaskaskia River Watershed, many farmers respond to these changes by engaging in collective discussions about land use change through organizations such as the KWA. These adaptations deepen community capacity and create space for identifying qualities of the landscape that farmers want to preserve. Partnerships with the KWA and other organizations have built social capital, which enabled us to examine farmer stories of lived experience and understand how they negotiate between the seemingly conflicting tensions of change. Our narrative analysis suggests that farmers negotiate these changes through two recurrent narratives that detail the relational significance of place meanings and emotions in their decision-making. In the first narrative farmers negotiate their decision-making around place meanings of efficiency and commodity values.

In the second narrative farmers position place meanings of family and farm legacy as the basis for justifying their decisions. Across these narratives we highlight that emotions of pride, honor, and respect are deeply intertwined with their decision-making. Their social capital was invested in the sharing of seemingly conflicting narratives and working an uneasy compatibility across the decisions of their lives. Together, these findings reveal that farmer decision-making is a process of negotiating the pressures of change through coherent aspirations for land that reflects their pride in stewarding land for market value, their family, and the rural community.

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