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Healthy people, soils, and ecosystems: uncovering primary drivers in the adoption of regenerative agriculture by US farmers and ranchers

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As regenerative agriculture grows in popularity, policy and decision-makers have become interested in its practices. Yet, little is known about those factors driving its adoption among farmers and ranchers. To better understand these drivers, we conducted semi-structured interviews with 31 farmers and ranchers across the United States (US) who self-identified as practitioners of regenerative agriculture. In doing so, we asked about relational values, which reflect one's perspectives around the links between humans and nature. We also asked about economic and environmental drivers for adoption. In the analysis, we used qualitative coding to identify the range of values and factors driving adoption across our sample. We found that 1) improving the health of people, soils, and ecosystems - through farming practices and related social configurations - was a primary driver for adoption, 2) that relative economic privilege, particularly across two extremes - privileged idealism and less privileged necessity - correlated with most drivers for adoption, 3) that a shift away from industrial agriculture was at once a moral, economic, and environmental imperative for many practitioners, and 4) a systems view of social-ecological relationships was seen as a key to adoption and societal transitions. While our sample represents only a narrow segment of the regenerative agriculture movement in the US, our findings can serve as a useful starting point for understanding the drivers for its adoption. Our findings may also inform conversations on regenerative agriculture's potential to support food-related sustainability transitions. The discussion situates our work amidst sustainable agriculture and social movement studies, questions of equity in food systems transitions, and the benefits of studying values in developing policy-relevant solutions.

KEYWORDS

regenerative agriculture, social movements, relational values, food systems, sustainability transitions, health

Introduction

Regenerative agriculture has drawn much attention for claims that its practices can help transform food systems for the betterment of current and future societies (Kastner and Kastner, 2016; Gosnell et al., 2019; Rosenzweig et al., 2020). Though regenerative agriculture can be defined in many ways, common aims include improving soil health, soil carbon sequestration, as well as balancing social, environmental, and economic benefits (Gosnell et al., 2019; Newton et al., 2020; Schreefel et al., 2020). Yet, there is debate as to how effective agricultural practices described as “regenerative” might be for achieving the claimed economic and environmental benefits (Searchinger et al., 2019). Furthermore, there are concerns that those guiding the use of regenerative agriculture have insufficiently considered how its history relates to issues of power, equity, and other related social concerns (Bless et al., 2023). Understanding the range of factors driving the adoption of regenerative agriculture may, therefore, support more effective and equity-oriented transitions across the food system.

While drivers for adoption across related sustainable agriculture movements have been studied, “the drivers for the rapid emergence of regenerative agriculture are not well understood,” (Bless et al., 2023, p. 1). To address this knowledge gap, our study expands understanding around the range of factors and motivations guiding the adoption of regenerative agriculture among ranchers and farmers, particularly in the United States. As the concept of “regenerative agriculture” is composed of a wide range of actors, with different approaches and definitions, we have chosen to examine it not just as a body of practices, but as an emerging social movement (Rosenzweig et al., 2020). To situate our study in wider discussions around adoption in sustainable agriculture movements, it will be helpful to briefly describe the history.

When compared with other sustainable agriculture movements, regenerative agriculture has distinct characteristics, and is in a relatively early stage of development. Though it lacks clear points of identity and bounded definitions, its historical, geographical, and cultural roots closely mirror related movements (Lejano et al., 2013; Bless et al., 2023). These movements include organic, sustainable intensification, and conservation agriculture. For example, genealogically, regenerative agriculture can be said to have “geographical origins in the Global North,” with “its founding actors... being primarily farmers and farmer groups,” (Bless et al., 2023, p. 2). These movements can be said to have included practitioners with varied perspectives, worldviews, and goals who came together over time to co-create shifts in the food system. Other commonalities include shared sets of practices and identities, aims of achieving some combination of social and environmental benefits, and some commonly held narratives. Regenerative agriculture shares, for example, the organic movement’s focus on ‘no synthetic fertilizers,’ which built upon values-based and scientific critiques of the ‘industrial agriculture’ system (Kimbrell, 2002).

Many sustainable agriculture movements, including regenerative agriculture, have also been criticized for lacking “sufficient recognition of structural challenges that are inhibiting a transformation to a sustainable agri-food system,” (Bless et al., 2023, p. 12). This claim recognizes that achieving food system sustainability requires more than environmental well-being, but social equity as well. One of the many challenges of achieving social equity in developing social

movements is how the perspectives of those in dominant and privileged positions can lead to appropriation and erasure of marginalized perspectives. There can also be a sense of affinity across these perspectives that creates a sense of shared worldviews. To support related conversations and help overcome these barriers, our study elucidates factors guiding adoption across a segment of the emerging regenerative agriculture movement. This recognizes that no study can claim to understand the whole of a social movement, but can contribute productively to understanding perspectives from a segment of that movement, as part of a greater whole. In this way, our work speaks to perspectives of the regenerative agriculture movement from which we sampled, while suggesting next steps for research on the movement as a whole.

Sustainability transitions and agricultural adoption: a social movement perspective

As a social movement, regenerative agriculture’s potential for improving food systems can be understood as its ability to support *sustainability transitions*. Sustainability transitions can be defined as “large-scale societal changes deemed necessary to solve ‘grand societal challenges,’” such as shifting from fossil fuel to renewable energy use (Loorbach et al., 2017, p. 600), or from exploiting groundwater to using rain catchment and water harvesting (Sixt et al., 2018). In food systems, sustainability transitions can also be further described as “useful ways to think about the dynamics, durability and significance of innovations in food and agriculture,” (Hinrichs, 2014, p. 143). In the context of regenerative agriculture, innovations which may hold such significance include the practices of annual cropping (Drawdown, 2021), planned grazing (Gosnell et al., 2019), as well as those drawn from other movements, such as soil building techniques from conservation agriculture.

Sustainability transitions usually focus at the level of *socio-technical regimes*, which can be described as assemblages of technology, culture, science, markets, industry, and policy that fulfill societal functions, such as food provisioning locally and globally (Geels and Schot, 2007). They are typically characterized by a dominant design that crystallizes over time, for example, the use of combine harvesters and synthetic fertilizer in industrialized farming. Socio-technical regimes tend to be stable and resilient over time, and operate according to set rules, until they are disrupted by exogenous events, such as a war or natural disaster, or until novel (re-) configurations of practices and technologies replace them (Geels and Schot, 2007). This is often marked by a shift from one dominant, incumbent regime towards a more desirable one. The adoption by a number of farmers of agricultural practices that deviate from the established norm can be understood as a process that is part of a socio-technical regime transition.

Understanding the adoption of agricultural practices by members of a social movement engaged in transition, relies on ‘culture’ as a unifying point of reference. Culture, in the form of beliefs, norms, and values, can maintain the stability of socio-technical regimes by reinforcing related habits and routines, or disrupt them by providing social foundations for “new modes of action” (Swidler, 1986, p. 282). In this way, drawing on and fostering shifts in individuals’ cultural narratives can be vital for sustainability transitions. In discourses on food security, for example, some civil society organizations construct

narratives that “reinforce dominant institutionalized practices,” while others frame solutions to food security as “suggestive of crisis and a challenge to dominant institutionalized social and discursive contentions,” (Tomlinson, 2013, p. 83). These efforts to influence cultural narratives that support (or not) the adoption of related practices suggests a pivotal role for social movements in bringing about shifts in established modes of food production and consumption, towards sustainability (El Bilali, 2020).

At the junction of socio-technical transitions and culture, and a key to understanding how social movements can influence the adoption of farming practices is the *value-oriented strategic agency* of individual actors (de Haan and Rotmans, 2018). We define value-oriented strategic agency as the capacity of an individual to act upon an alignment between their values and their needs. As a hypothetical example, when faced with a problem, a farmer may reflect on the impact of their farming methods on their own livelihood, community and society at large, or on local environments. They may conclude that impacts of current practices contradict closely-held values, such as family farming or community resilience. They may then seek to adopt an alternative set of farming practices that allows them to operate in line with their values – through experimentation, advice and information from experts or peers, or a combination of these – while seeking to maintain or enhance their farm’s economic viability. Through participation in social movements and formal and informal networks, this process of re-aligning one’s actions with one’s values can gain in traction and scale when other actors recognize the same values as important and adopt related farming practices (Gosnell et al., 2019; O’Brien et al., 2023). This familiar narrative is one way value-oriented strategic agency can influence social movements in support of sustainability transitions.

If change in socio-technical systems can be seen as the result of mobilizing the value-oriented strategic agency of many individuals (de Haan and Rotmans, 2018), then it is important to understand the values motivating individual farmers to adopt certain practices and participate in related social movements. This may be particularly important for those values at the interface of social and environmental systems, such as *relational values*, described below. As this study highlights, understanding the role of these values in driving adoption of regenerative agriculture can also help us understand its transformative potential.

A relational values approach to food systems and adoption research

Social movements are often guided by values that extend beyond economic or environmental benefits (Ingram et al., 2014; Loorbach et al., 2020; Janzen et al., 2021). For example, the emergence of the ‘organic movement’ was guided in part by desires for healthy social-ecological relationships (Lejano et al., 2013). Similarly, translocal networks such as *La Via Campesina* have been guided by a desire to scale collective action in support of food sovereignty, the belief that people should be in control of their food access (Westley et al., 2011; Alger and Dauvergne, 2020; Loorbach et al., 2020). Value-related factors such as culture, social cohesion, and place attachment can also influence farmers’ land-use decision-making in the maintenance of multi-functional agricultural landscapes (Allen et al., 2018). One way to understand the types of values that link social and ecological relationships, are as *relational values*.

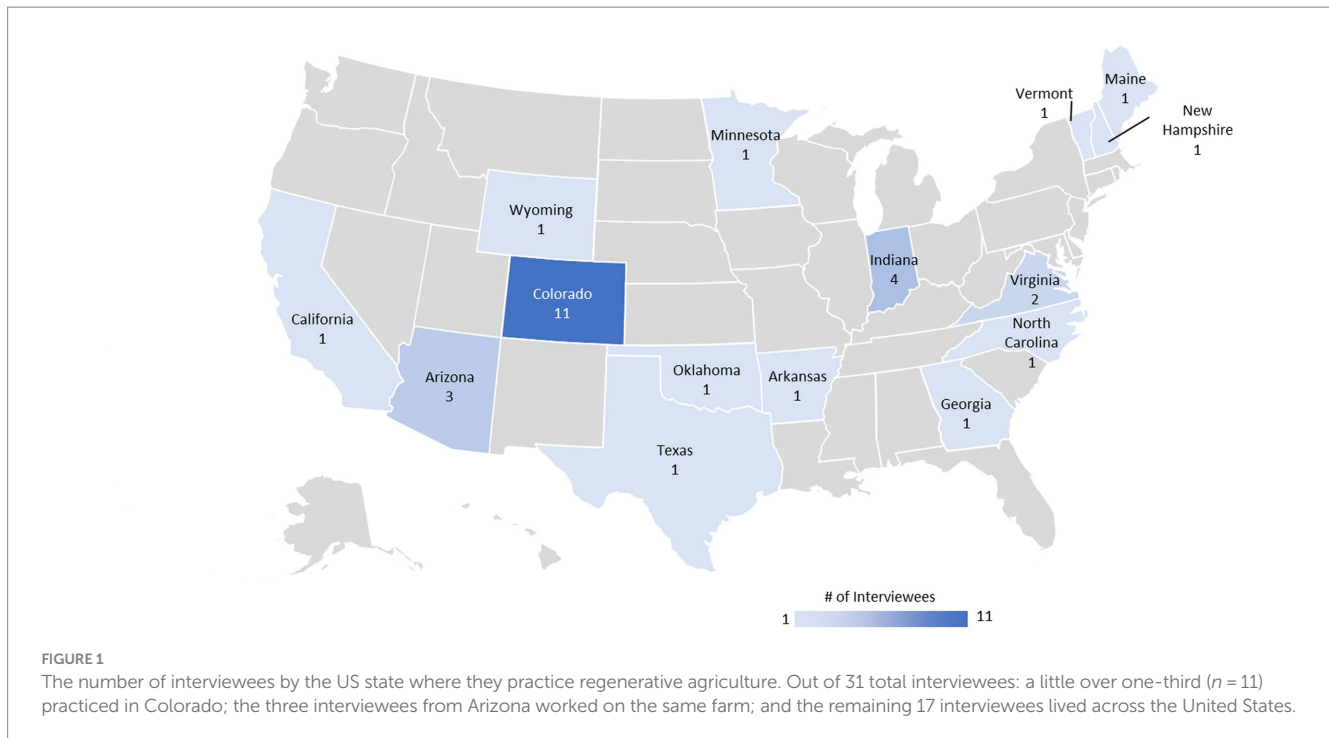
Relational values can be understood as “values linking people and ecosystems via tangible and intangible relationships to nature as well as the principles, virtues and notions of a good life that may accompany these” (Klain et al., 2017, p. 1). These values include senses of kinship, community and cultural identity, and stewardship associated with connections with nature (Allen et al., 2018; Britto dos Santos and Gould, 2018; Chan et al., 2018). Relational values complement “instrumental” and “intrinsic” value perspectives, which, respectively, correlate to anthropocentric and biocentric worldviews. In this way, relational values are situated at the interface between these more commonly understood value propositions. As a research lens, relational values can explain participation in and adherence to a range of social and environmental behaviors and practices (Weber et al., 2017; Britto dos Santos and Gould, 2018; Gould et al., 2018; Jones and Tobin, 2018), making them useful for examining adoption in an emerging agricultural movement.

There is evidence that adoption of regenerative agriculture has been guided by practitioners’ relational values in addition to economic and environmental concerns. For example, the relational values of community well-being (Kenny and Castilla-Rho, 2022), eco-stewardship (Francis et al., 1986; Rhodes, 2013), and connections with nature (Gosnell et al., 2019) have been shown to influence farmers’ commitments to regenerative agriculture. This builds on findings that farmers’ decisions about which agricultural practices they adopt are driven by a range of social and cultural factors – especially their values around linked social and ecological relationships, such as place attachment (Lejano et al., 2013; Vecchio, 2013; Bang et al., 2014). Relational values can also elucidate social and ecological systems interactions (Moore et al., 2014; Gould et al., 2015). These qualities make relational values a valuable lens for sustainability transitions research around regenerative agriculture, and can offer insight into some of the cultural factors which may be influencing adoption.

Understanding how relational values can influence the adoption of regenerative agriculture may also be important for decision-makers (Gould et al., 2015; Skubel et al., 2019). For example, a relational values lens can support culturally inclusive policy-making by offering insight into pluralistic contexts (Himes and Muraca, 2018; Skubel et al., 2019) such as an emerging social movement, with participants from many demographics, working across multiple scales of action. Cultural and non-material factors, such as those described by relational values are often under-considered when compared with economic concerns, yet they may be vital for developing effective policies (Arias-arévalo et al., 2017; Skubel et al., 2019).

In summary, while considerable research around adoption has been conducted for other sustainable agriculture movements (Bless et al., 2023), little is known about factors driving adoption of regenerative agriculture among farmers and ranchers (herein referred to as ‘practitioners’). Understanding these drivers, through the lenses of relational values and related economic and environmental drivers, can support research and decision-making around this emerging social movement in context of food-related sustainability transitions. As research questions to advance these conversations, we asked:

- What relational values, and economic and environmental factors, do practitioners report as influencing their adoption of regenerative agriculture?



- How do practitioners report that relational values, and economic and environmental factors interact in driving their adoption of regenerative agriculture?
- Considering all factors together, what can we learn about regenerative agriculture's adoption that can inform decision-making and future research around transitions to sustainability?

Methods

Data collection

To answer our research questions, we conducted semi-structured interviews with practitioners of regenerative agriculture in the United States. We defined 'practitioners of regenerative agriculture' as those who self-identified as engaging in the practices of regenerative agricultural production. This acknowledges that regenerative agriculture does not have a single working definition (Newton et al., 2020). Pre-identifying who counts as a practitioner may thereby have limited the study population and range of drivers for adoption we could identify. Allowing for practitioner self-identification further aligns with our understanding of regenerative agriculture as an emerging social movement, where those who choose to participate in the movement help to define its composition and practices, rather than the other way around. This aligns with our understanding of emergence and agency in socio-technical systems.

We chose the semi-structured interview format (Bernard, 2011) to allow us to converse openly with participants to better understand the relationships between their relational values and economic and environmental drivers. Our interview protocol (SI-A) built upon

approaches used by Gould et al. (2015) and Chapman et al. (2019) to study relational values in multi-cultural contexts. We asked participants for examples of how relational values, and economic and environmental factors, influenced their adoption and practice of regenerative agriculture. We also asked them if there were any connections between these values and factors, and to describe them if so. All questions used are detailed in the interview protocol (SI-A). All interviews were conducted over Zoom and recorded with interviewees' consent.

For sampling, we used a snowball sampling approach, an iterative process drawing on a social network principle (Noy, 2008; Robinson, 2013), to identify participants. We used two starting points to generate initial leads, 1) our professional contacts, and 2) reaching out to other regenerative agriculture organizations. We then asked respondents for additional contacts who may be willing to participate. We stopped sampling at response saturation, defined as the point at which dominant patterns in interviewee responses were being reinforced and few new patterns were emerging (Saunders et al., 2018). We identified response saturation using analytical memoing, after 25–28 interviews. At this point we completed interviews that were already scheduled but ceased seeking additional participants. We conducted interviews with 31 practitioners across the United States (Figure 1).

Data analysis

To begin the analysis, we used the Otter.ai transcription tool to convert interview audio to text. Where any wording was ambiguous, the transcripts were checked against the recordings for accuracy. We then imported the transcripts to the MaxQDA software package to conduct the analysis. We used analytical memoing, as well as open-, closed-, and axial-coding, to examine the data, develop our findings,

TABLE 1 Relational values used as closed codes for analyzing transcripts from semi-structured interviews with farmers and ranchers who practiced regenerative agriculture.

Relational values	Definition
<i>Care for nature</i>	Feeling of concern or love for aspects in or of nature that matter to someone
<i>Community defined by nature</i>	Perception that nature contributes to what human communities are, as a group, and to social bonds and cohesion
<i>Connectedness with nature</i>	Feeling a part of or connected with nature as an aspect of being
<i>Culture informed by nature</i>	Knowledge, beliefs, attitudes, and local customs defined by relationships with nature
<i>Eco-focused stewardship</i>	Desire to take action to care for non-human aspects of the land and/or ecosystems
<i>Eco-responsibility</i>	Perception of accountability for what happens to, and the use of ecosystems
<i>Generational eco-stewardship</i>	Duty to protect the land and/or ecosystem an preserve or improve it for future generations
<i>Good life</i>	A sense of one's desired lifestyle as it relates to happiness and well-being
<i>Identity as a part of nature</i>	Perception that feelings or views about nature are part of who a person is
<i>Kinship with nature</i>	Feeling that ecosystem components (e.g., plants, animals, water, soil) are 'kin' or family
<i>Moral duty to non-humans</i>	Having a sense of duty to non-human life as a point of morality
<i>Place attachment as identity</i>	Importance of place to one's sense of self
<i>Social cohesion through nature</i>	Community integration or social capital rooting in relationships with nature
<i>Social responsibility</i>	Ecosystem care as part of a sense of responsibility to other humans

We drew these relational values from Allen et al. (2018) and Britto dos Santos and Gould (2018), and adapted them for consistency for this study.

and answer our research questions. This approach is consistent with well-established qualitative analysis methods (Mills et al., 2006; Srivastava and Hopwood, 2009; Charmaz, 2016).

Analytical memoing

After each interview, we engaged in analytical memoing to reflect on the interview and explore emerging patterns across interviews. In doing so, we highlighted key points interviewees made, and explored the connections and differences between interviewees' perspectives. We also used analytical memoing for generating codes and themes (Birks et al., 2008), described below, and to reflect on our positionality as researchers during the study. Memoing also helped us generate ideas for follow-up questions for future interviews and decide when our sample approached saturation. In writing-up our discussion, we used these memos as starting points for identifying connections between our findings and the food systems and sustainability transitions literatures.

Closed and open coding

For closed coding, we started with a set of relational values as predetermined tags or "codes" (Table 1). We selected these sources for their relevance to agriculture and for the range of relational values they covered. As some of the values in these papers had overlapping and incongruous definitions, we adjusted the names and definitions of several values to create consistency. We also created a code called "primary drivers" to help us capture responses to two interview questions that asked for primary drivers of adoption. These coding categories helped us answer our first and second research questions.

For open coding, we generated economic and environmental factors codes to support analysis. We also generated a category of "additional factors" codes that related to practitioners' adoption of regenerative agriculture and choice of practices. These helped us contextualize practitioners' perspectives across factors. In generating these codes, we identified a category we called "synergies and

tensions." Synergies were areas where practitioners believed in a beneficial connection between what otherwise may have seemed to be disparate factors. Tensions represented areas where practitioners saw some challenge or tradeoff between conditions, values, or factors in practicing regenerative agriculture. We based the creation of the aforementioned codes on our experiences as food systems researchers. These codes and categories helped us answer our second and third research questions.

In both closed and open coding, we considered an interviewee's response to each question as a whole, and coded the answer across values and factors. This approach is consistent with narrative analysis in qualitative research (Riessman, 1993) and allowed us to explore how the range of values and factors we examined influenced practitioners' decision-making and adoption of practices. A single researcher (LFG) conducted all coding to support "reflexivity and active personal engagement with the data" as a resource amidst many possible interpretations of interviewee responses (O'Connor and Joffe, 2020).

Axial coding and generating findings

Our final step was to use axial coding (Simmons, 2019) to help us generate our findings. Axial coding can be understood as a "process of relating pieces, or codes, of data to each other... using deductive and inductive reasoning" (Simmons, 2019, p. 2). To do so, we used analytical tools in MaxQDA to examine cross-code interactions and technically examine relationships across codes (see the 'Synergies and Tensions' section of the Results for an example). We also drew on analytical memos to help us explore alternative explanations for the results and to maintain a reflexive lens on our work. Throughout the analysis process, we found that the 'additional factors' and 'synergies and tensions' codes helped us to situate the relational values, and economic and environmental factors findings in the experiences and perspectives of our participants. This observation helped us answer our second and third research questions. In presenting the results, below, variables drawn directly from our coding are *italicized* for clarity and to link observations to the data.

Results

Description of interviewees

Building on the snowball sampling method, we ended up interviewing contacts found mostly through the Savory Global Network and Mad Agriculture, two regenerative agriculture organizations headquartered in Boulder, Colorado. These contacts led to additional contacts referred by the initial set, some related to the original organization and others not. This led to a geographically diverse sample pool, with most of interviewees as members of regenerative agriculture organizations, and some unaffiliated. We describe the Savory Global Network and Mad Agriculture briefly as well as related interviewee counts, below, to help situate our results relative to the segments of the regenerative agriculture movement they most closely represent.

The Savory Global Network aims to further the use of ‘holistic management,’ a form of grazing and land management, through a network model of collective action, to support the regeneration of grasslands (Frankel-Goldwater and Kingdon-Smith, 2022). The organization is structured as a US-based non-profit that serves as the facilitator of the global network. The network is composed of “hubs,” which are a farm or land management project led by a “hub leader.” Hub leaders are trained in the Savory brand of holistic management and are active practitioners of the method, though many use other ‘regenerative’ practices as well. Through a contact at the Savory Global Network, we were provided with the contact information for all hub leaders in the United States. We reached out to all, and eventually conducted interviews with 15 hub leaders, representing just under half of our sample pool.

Mad Agriculture supports practitioners engaged in transitions to regenerative agriculture across the United States, and is structured as a US-based non-profit. In their own words, “We work from heart to head, poetry to science, financing to markets, and soil to shelf. We meet farmers where they are at in their journey as they transition to regenerative agricultural models,” (Mad Agriculture, 2023). Their primary activities focus on building community, creating innovative marketplace solutions, supporting farmer success on the land, and financing related projects. Unlike the Savory Global Network, participants in Mad Agriculture’s programs do not necessarily practice a specific form of regenerative agriculture or set of practices (e.g., holistic management) but draw from a wide-range of influences. Through a contact at Mad Agriculture, we received the contact information for some of the farms they work with, reached out to all, and ultimately conducted interviews with 6 practitioners, ~19% of our sample pool.

Interviewees included practitioners from across the United States (Figure 1). Their farm or ranch size ranged from a small homestead of a single acre to large operations of thousands of acres. Practitioners engaged in at least one of: vegetable production, livestock production, or non-timber forest product production (e.g., maple syrup). Some were new to farming or ranching, while others were second- or greater generation agricultural producers. Many had only recently (less than a few years) started practicing regenerative agriculture, while others claimed to have been practicing for many years. Of our interviewees, 10 came from those not directly connected with either the Savory Global Network or Mad Agriculture, and were identified through the snowball sampling method, representing just under a third of our

sample pool. We recognize that our sample pool represents but a segment of the regenerative agriculture movement. Our results can therefore only speak only to those perspectives, particularly those closely associated with Savory Global Network and Mad Agriculture. These results may, however, suggest topics, questions, trends, and areas of inquiry that are of interest to the social movement as a whole.

Interviewees described a wide-range of practices in their definitions of regenerative agriculture. Those associated with the Savory Global Network commonly noted holistic management as a practice, though also spoke to a range of influences. A commonality across definitions was the possibility of including many different practices into regenerative agriculture based on their underlying processes or outcomes being “regenerative.” This highlights a tendency for comfort with “emergence” as part of practitioner definitions. Common process-oriented definitions and descriptions of regenerative agriculture included working with ecosystem cycles towards progressively improving land and the capacity to experiment with new methods. Common outcome-based definitions and descriptions of regenerative agriculture included improving soil health, social and ecological well-being, and producing more nutritious food. Most practitioners we interviewed expressed their definitions of regenerative agriculture as being a combination of both processes and outcomes.

What relational values, and economic and environmental factors, do practitioners report as influencing their adoption of regenerative agriculture?

Relational values

Social responsibility was the most common relational value practitioners mentioned (Table 2). Related discussions often focused on caring for people and communities through care for ecosystems. In the case of *generational eco-stewardship*, caring for land, place, and planet were part of providing for future generations, including one’s children or the whole of humanity. Practitioners’ perspectives around *eco-focused stewardship*, *eco-responsibility*, and a *care for nature* show that many were motivated by environmental well-being for its own sake, on global and local levels. These findings show that a range of instrumental and intrinsic values drove adoption of regenerative agriculture among interviewees. Many conveyed that regenerative agriculture could help balance benefits for self and others (including nature).

Practitioners also saw regenerative agriculture as helping them to live a *good life*. This value was closely tied to practitioners’ senses of *connectedness with nature*, *social cohesion through nature*, and *place attachment as identity* in the experience of agricultural activities. *Place attachment as identity* presented as a desire to protect land or ecosystems, protect a community’s agricultural lifestyle (re: *culture defined by nature*), and to pass on a “healthy landscape” to one’s children. While practitioners conveyed a blend of utilitarian and altruistic perspectives on this desire to protect, all expressed an understanding of the links between human and ecosystem well-being in achieving personal and collective goals. For many, this understanding was rooted in a *moral duty to non-humans*, seeing it as a personal responsibility to do no harm to or “regenerate” ecosystems while, in parallel, achieving a good life. When practitioners referred

TABLE 2 The percentage and number (in parentheses) of interviewees that mentioned each relational value as being a driver of their decision to adopt regenerative agriculture (RA).

Relational value	% (n) of interviewees	Summary of common perspectives and example quotes
Social responsibility	93.6 (29)	Farming responsibly is important for people and the earth, using our fair share of resources to “feed my community” and support “the well-being of humanity”
Good life	71.0 (22)	Enjoying farming life, being close with nature, the aesthetics of farm living, valuing the farming lifestyle, “it’s feeling good about what you do... and you can have purpose in life”
Generational eco-stewardship	64.5 (20)	Keeping the land and farm healthy for one’s children, honoring the work of past generations, leaving the planet better than we found it, “leaving a legacy for my kids”
Connectedness with nature	61.3 (19)	Growing up close to nature, enjoying a day-to-day life close with the land, being “part of nature” is linked with our sustenance
Care for nature	58.0 (18)	Paying attention to the ecosystem and supporting its healthy function, expressing “my love for nature” through my work
Eco-focused stewardship	58.0 (18)	Planetary well-being, desire for “seeing the entire ecosystem become healthier... more plants, more animals, more life”
Social cohesion through nature	58.0 (18)	Holding farm communities together through RA, struggle with non-RA “farmers disagreeing on practices,” keeping farmland productive for communities, RA supports community resilience
Moral duty to non-humans	51.6 (16)	Biodiversity loss is wrong, “being true to our word” in practicing RA, integrity as a part of nature, it’s “the right thing to do”
Culture informed by nature	45.2 (14)	Farming is part of who we are, rural lifestyles are disappearing and should be preserved, returning to our “roots” or “tradition”
Place attachment as identity	41.9 (13)	This land is worth protecting, the land is part of who we are or who my family is, it’s not just a business “it’s our life”
Community defined by nature	35.5 (11)	We “are just borrowing this land” and it helps us become who we are as farmers, our agricultural community is part of nature
Eco-responsibility	29.0 (9)	It’s our duty to protect the planet as we are producing food... “to create more life” through agricultural practice
Identity as a part of nature	25.8 (8)	“I think I’m connected to the land and that way, value the land in that way,” it’s who we are and why we want to protect it
Kinship with nature	6.5 (2)	We are all part of a family within an ecosystem, “recognizing you are part of a whole” including humans and ecosystems

A summary of common perspectives and example quotes are provided for each value. All relational values we coded for are shown.

to non-human life, many referenced both flora and fauna, and both domesticated species (e.g., livestock, crops) and native biodiversity. Some practitioners also expressed a sense of *identity as a part of nature* and *kinship with nature*, viewing themselves as not just as ecosystem stewards but seeing nature as an irrevocable part of their human experience. This further highlights that many practitioners saw human and non-human life as interdependent, and that caring for these relationships was part of the *good life* that may be achievable by practicing regenerative agriculture.

Economic factors

A majority of practitioners saw that achieving economic stability as part of practicing regenerative agriculture was necessary for both personal well-being and achieving social-ecological shifts (Table 3). *Profitability* and *viability* were closely linked to an idea of earning enough money, in the short and long term, to allow for continued practice. Similarly, reflections on *livelihoods* centered on an ability to maintain a farming lifestyle alongside personal or collective economic stability. Reflections on *markets and marketing*, as well as *productivity and/or yield* highlighted practitioners’ present ability or future desire to produce and sell enough farm products to achieve economic goals. Many believed that regenerative agriculture offered novel opportunities for doing so. Improvements in *efficiency* tended to focus on improving the land, time, or resources necessary to achieve financial aims. While practitioners expressed a need to maintain or achieve an economic “baseline” to justify practicing regenerative agriculture, none stated a desire to ‘get rich’ through their practices. Instead, practitioners generally wished to achieve a stable lifestyle without economic hardship, requiring additional jobs, incurring intractable debt to maintain the farm, or living hand-to-mouth.

Conversations on economics illuminated some of the challenges of farming in the United States and how economic hardship can influence practitioners’ decisions to adopt regenerative agriculture. For example, many wished to “regenerate” *local and/or rural economies* to support struggling farming communities. These *financial struggles* were often seen as due to the behaviors or extractive global supply chains, degraded land, the negative health impacts of chemically-intensive agriculture, or issues of *land tenure*. Where interviewees expressed the *economic privilege* to practice regenerative agriculture without financial risk, or as secondary to their livelihoods, they also frequently expressed a joy at the ability to practice and participate in the movement, with the recognition that farming is difficult regardless of circumstances. Where interviewees expressed relatively less privilege, such as a lack of *land tenure* or *financial struggle*, they also expressed frustration with mainstream economic systems and agricultural practices, which they saw as a source of these struggles. Regardless of level of privilege, practitioners recognized that small- and large-scale economic challenges needed to be addressed to achieve broader food systems transitions, and they saw regenerative agriculture as a possible vehicle for doing so.

An attraction to regenerative agriculture also came in the form of new ways to invest in one’s desired future. Many practitioners discussed financial *investment* as a way to improve the five most-common economic factors we identified (Table 3). For example, 19.4% of practitioners noted that *new supply chains* around “regenerative products” may serve as a complement or challenge to existing food supply chains; while 35.5% identified the potential of *added value products* that consumers may be willing to pay more for through increased *consumer awareness and/or “regenerative” labeling*. The opportunity to gain access to untapped economic potential was an important driver of adoption across interviewees.

TABLE 3 The percentage and number (in parentheses) of interviewees that mentioned each economic factor as being a driver of their decision to adopt regenerative agriculture (RA).

Economic factor	% (n) of interviewees	Definition with topics and examples
Profitability	71.0 (22)	A short or long-term ability to earn money from farming. Earning enough to pay for the farm, living a secure lifestyle, “you have to earn enough for it to make sense”
Livelihoods	67.7 (21)	Gainful work for oneself, family, and/or community. Desire to protect and provide jobs for self and community, “earning a living” or “living wage” for self and family
Markets, marketing, and farmer’s markets	67.7 (21)	Access to sell goods into small and/or large-scale supply chains and increasing consumer awareness to purchase RA products. “Using market mechanisms” to earn profit and “avert climate disaster”
Productivity and/or yield	64.5 (20)	The quantity of marketable goods produced given certain time or costs. Producing enough to justify RA practice, “producing more” through RA than other methods.
Viability	61.3 (19)	The ability to have a long-term functioning farm considering time, cost, and intended outcomes. Work-life balance, “making enough” to justify RA practices
Efficiency	38.7 (12)	Getting more done, such as production, given certain processes, time, and costs. Producing “less waste,” “without chemical inputs,” “to produce even more” with RA
Added value products	35.5 (11)	Producing goods that consumers will pay more for when compared with conventional alternatives. This includes “healthier” products from local sources
Investment	35.5 (11)	Time and/or costs resources for short or long-term well-being of the farm or land. “We have to look at [RA] as a very, very long-term investment”
Local and/or rural economies	32.3 (10)	Economic impacts on/for nearby or rural community members. “Feeding families and keeping food part of communities” rather than from global supply chains.
Financial struggle	29.0 (9)	Financial and/or personal difficulties and/or challenges as a part of farming practice. “Farming is hard,” “farmers, they are working with such little profit margin”
Land tenure	22.6 (7)	The ownership of or ability to stay on the land where one farms. “My landlord likes [RA], if I wasn’t doing it, my landlord would probably not be renting to me.”
Economic privilege	19.4 (6)	Having financial resources or the lack thereof of practice RA as desired. A “disparity between land ownership” ... “how do I, with my own privilege, leverage some of my own resources and power to bring more people into this space?”
Supporting new supply chains	19.4 (6)	Creating new avenues for bringing ‘regenerative’ farm goods, from production to distribution, to consumers. With “the right supply chain, you can raise more animals and get more dollars in your pocket to continue creating positive change”
Consumer awareness and/or labeling	12.9 (4)	Raising the awareness of RA through media, advertising, events, and recognized RA product labels. “Put a ‘regenerative’ label and market for more money”

A summary of common perspectives and example quotes are provided for each value.

Environmental factors

Soil and/or land care and *ecosystem well-being* were the top environmental factors practitioners mentioned, by a wide-margin, and were often discussed together (Table 4). Most practitioners (93.6%) shared a desire to improve their farm’s soil and/or land through regenerative practices, which closely aligned with a desire to protect and improve local ecosystems which the land was a part of. Where “ecosystems” were mentioned, they were often described as part of and subsuming the land under farm management. In this way, the term covered non-human life and nature that was not managed by the farm and was often described alongside a desire to protect *biodiversity* through regenerative practices, both on- and off-farm. These aims were often described as fundamental to the practice of regenerative agriculture.

Many practitioners described both small- and large-scale environmental aims for their farming practices. For example, some emphasized the importance of improving soil and local ecosystems, while others wished to reverse *climate change* or contribute to *planetary well-being* through *carbon sequestration* or transitioning agriculture from industrial to regenerative practices. While many practitioners expressed both small- and large-scale aims for their practices, they tended to emphasize one or the other as a driver for adoption. Relatedly, some interviewees expressed selfless and altruistic tendencies in their environmental aims, for example, helping to protect global *biodiversity* for its own sake; while others conveyed less altruistic goals or sought a balance of small- and large-scale aims.

Examples included running a regenerative farm to improve a single parcel of land (and no more), enjoying the *aesthetics* of a flourishing landscape (for personal joy), fostering local food security through productive soils (for the community’s sake), or serving as an example farm for a regenerative food systems transition. For most practitioners, improving environmental well-being (at some scale) was seen as a necessary feature of regenerative agriculture, yet must also come alongside human well-being and societal transitions as well.

Practitioners also saw regenerative agriculture as a creative framework for engaging with personal and environmental well-being. For example, some practitioners described *mimicking ‘natural’ systems* as part of sound agricultural practice, or a moral identity of *being ‘green.’* While the former was discussed as a technique in the practice of regenerative agriculture, the latter emerged as a driver and guide for the practice. Similarly, some spoke of a need to creatively navigate *natural resource abundance or scarcity*, such as the politics of local water rights. Interviewees also reported that regenerative agriculture gave them a toolset to think about addressing challenges in new and creative ways and towards achieving desired personal and collective futures. Alignment with this emergent and dynamic quality was common.

In addition to the relational values lens, we found that examining environmental drivers for adoption offered us insight into practitioners’ views on human-nature relationships. For example, practitioners often discussed *animal welfare* and caring for livestock as the “right thing to do” and as a part of contributing to ecosystem

TABLE 4 The percentage and number (in parentheses) of interviewees that mentioned each environmental factor as being a driver of their decision to adopt regenerative agriculture (RA).

Environmental factor	% (n) of interviewees	Definition with topics and examples
Soil and/or land care	93.6 (29)	Stewarding physical land or soil to be more productive or biologically viable. "Take care of the soil first, and everything that emanates from that soil. That's RA"
Ecosystem well-being	83.9 (26)	Attending to the biological interdependence between land, human and non-human life. Using RA "so we could have a whole functioning ecosystem"
Animal welfare	51.6 (16)	Care for the biological and psychological well-being of animals, as part of the farm. "They're not an object. We like all our cows, we have gone through a lot with them"
Climate change	48.4 (15)	Addressing the human induced shift in global or regional climate patterns. "If we do not address agriculture's contribution to climate change, and also its potential to be a solution, we are doomed as a species"
Planetary well-being	45.2 (14)	Concern for the 'whole planet' including human and non-human life. "Move us forward in just saving the world, I do not want to extract more than I that I've left"
Biodiversity	41.9 (13)	Care for the amount and variation of species in an ecosystem or on the planet. "Biodiversity for biodiversity's sake, and recognizing that all life is interconnected"
Mimicking "natura" systems	35.5 (11)	Mirroring the way 'nature' has adapted to a challenge and modeling this in human constructed contexts. "To the greatest extent we can, we emulate how nature's cycles work"
Aesthetics	25.8 (8)	Experience of joy or well-being at the sensory experience of nature. "I am deeply in tune with what's going on the land... and I feel happiest in those spaces"
Carbon sequestration or 'climate smart' agriculture	19.4 (6)	Agricultural practices that are either carbon neutral or positive, meaning they do not add or take carbon dioxide (in aggregate) from the atmosphere. "I'm thinking about soil carbon sequestration, because I think climate change is a major driver for us"
Being 'green'	16.1 (5)	Identifying with or being seen as using environmentally friendly practices, as part of a moral agenda. "I got into food because it's all these different intersectionalities, not just environmentalism. It's not just, food equity and food justice"
Natural resource abundance or scarcity	12.9 (4)	Where a natural resource, such as water, drives a choice of practices or decision-making. "Water and soil fertility... improve those systems to get abundance again"

A summary of common perspectives and example quotes are provided for each value.

health. Many interviewees viewed the biological and psychological health of livestock as part of a wholesome farming lifestyle that created healthier food and supported a moral worldview. *Animal welfare* could therefore be seen as an extension of their relational values, overlapping with *care for nature* and/or *moral duty to non-humans*. Coding these findings across both relational values and environmental factors helped us draw out nuanced perspectives, such as the differences between the biological benefits of soil health and a moral responsibility to care for land.

What additional factors and considerations did practitioners describe as drivers for adoption?

Many practitioners described 'additional drivers' for adoption that either combined, went beyond, or did not fit neatly into the frames of relational values, or economic and environmental factors (Table 5). Many of these represented a characteristic of a person's worldview, morality, or way of being in the world. For example, *health and/or healing*, which was the most common additional factor we identified, intersected with all major coding categories. These additional factors also highlighted many practitioners' aims for regenerative practice, for example, *teaching and learning* was seen as a path for economic gain as well as a way to "spread the word" about regenerative agriculture towards social and environmental goals. As a further example, expressions of *systems thinking* were common and mirrored practitioners'

awareness of social and ecological interdependence. As many additional factors combined with or enhanced our understanding of other values and factors, we have integrated further explanations and interpretations of these findings in the upcoming section on 'Key Themes and Findings'.

What synergies and tensions did practitioners identify relative to their drivers for adoption?

Practitioners conveyed a range of synergies and tensions that describe the broader social and conceptual contexts of regenerative agriculture (Table 6). For example, many expressed a synergy in viewing humans and ecosystems as mutually-dependent in a context of *non-domination of nature* (Table 5), or as partners with natural systems rather than their controllers. This was often expressed alongside a view that current modes of industrial agriculture contribute to domineering and destructive human relationships with ecological systems, relationships that need to change to support human and ecological well-being. This aligned with beliefs that finding a *balance between economics and the vision of regenerative agriculture* is a real possibility, a view that was essential to many practitioners' choice to adopt.

Practitioners also identified tensions that may be limiting adoption. These included: the challenges of aligning the *vision of regenerative agriculture with economic potential, privilege or a lack of privilege* to experiment with new practices, the drawbacks of

TABLE 5 The percentage and number (in parentheses) of interviewees that mentioned each additional factor as being a driver of their decision to adopt regenerative agriculture (RA).

Additional open factors	% (n) of interviewees	Definitions with topics and examples
"Health" and/or healing	90.3 (28)	For the well-being or betterment of people and/or ecosystems. Being on "a personal health journey" ... towards "repairing the soil and communities"
Desire to "make things better" or improve conditions	83.9 (26)	An aim to improve people's lives and/or ecosystem well-being. "My mission is to try to leave this place better than I found it"
Systems thinking and/or big picture and/or holistic worldview	80.7 (25)	Viewing small- and large-scale systems (social, ecological, etc.) as mutually dependent, guided by feedback loops and counterbalances. "We think about ourselves in the whole system because we are part of the system"
Social-ecological systems change	74.2 (23)	A desire to shift social and/or ecological systems away from a destructive or towards a desired state. Seeking a "paradigm shift"
Non-domination or working with nature (vs against)	74.2 (23)	Seeking natural systems as an ally and co-creator rather than subject for manipulation. "Benefiting the ecosystem instead of taking away from it"
Teaching and learning about RA	71.0 (22)	Desire and/or incentive to share and "spread the word" about RA practices, potentials, outcomes, and/or worldviews
Risk tolerance, courage, embracing uncertainty, experimentation	67.7 (21)	Where practitioners stated an ability or willingness to accept and embrace unknowns about the utility of RA or related practices. "We're lucky that we can do all these experiments and figure things out"
Moving towards a future or life that we or "I" seek	61.3 (19)	Seeking RA as part of the path to a desired future for people and the planet. "We're still all trying to move towards this better vision"
Challenging the status quo	61.3 (19)	Pushing back against the dominant narratives of society. "They give us no voice or choice in this system. So it just it's where we are fighting this system"
Finding community via food and the RA identity	61.3 (19)	A sense of connection with people of like-mind in agricultural practice. "A lot of people in RA have the same values, so we connect on that. It's super valuable to build that community"
Moving towards or maintaining personal and/or family well-being	61.3 (19)	A focus on care for oneself and/or family as an aim for adopting RA. "My first value is to provide for my family, conventional ag. [sic] does not offer that"
Visibility of RA practices	61.3 (19)	When the practices or outcomes of RA are materially visible to people. "We share our story and how we are growing food is better for the environment"
Urgency, survival, and/or avoiding social ecological collapse	48.4 (15)	A need to make social and/or ecological change a priority based on a perception of impending crisis. "I appreciate the RA movement providing hope for people and a path out of disaster"
Long-term thinking and/or planning for long-term benefits	48.4 (15)	An ability to see short-term inputs (time, resources, etc.) as part of an investment in future benefits. "We need to take incremental steps to meet our long-term goals"
Multi-generational farming and/or land use	48.4 (15)	Using the same land or farming practices as a family tradition. "I have a multi-generational farm and ranch family"
RA is "a journey" not a destination (process vs. outcome)	45.2 (14)	An ethos of curiosity in discovering the benefits of RA. "The person's journey, they could be practicing RA, but only scratching the surface"
Land as "wealth"	45.2 (14)	Linking land well-being and improvement as a form of financial gain. "The best retirement plan would be investing in regenerative soil"
Inspiration (self/others), profound, passion, joy, and/or purpose	45.2 (14)	Noting a sense of uplift at the possibilities of RA for self and/or others. "Feeling purpose in your life"
Resilience of systems supported by RA practices	41.9 (13)	A belief or experiential insight that RA can fortify the well-being of people and/or ecosystems. "Improving the resilience of production"
Social and/or eco Justice	41.9 (13)	Seeing RA as part of a path to achieving social and/or eco justice, broadly conceived. "How can we get more black and indigenous communities involved in the farming conversation?"
Farming is "hard" and/or a struggle	41.9 (13)	Recognition that farming (RA or otherwise) is physically, emotionally, and/or mentally challenging. "We have a hard time keeping the farm going"
Food security and/or feeding people	41.9 (13)	A desire to provide food, generally healthier, for self and others. "We're just trying to feed people"
Local food and/or "keep food local"	41.9 (13)	Maintaining food production close to point of use for health and resilience. "Local food is the most important thing we could be pursuing right now"

A summary of common perspectives and example quotes are provided for each value.

shifting practices between *old and new practices* or traditions, issues of *cooperation between practitioners* some of whom were not practicing regenerative agriculture, and pressures from status quo economic regimes to not change practices. Furthermore, some noted they were transitioning practices not out of *altruism*, but out of economic, personal, or moral necessity. This means a practitioner's switch to regenerative agriculture may be driven by beneficent aims, but also out of a desire to "survive" amidst social, economic, and/or environmental uncertainty. We see these findings as points of reflection for understanding and situating the range of factors we identified in context of broader social and ecological considerations.

What values and factors did practitioners identify as their primary drivers for adoption?

Primary drivers for adoption emerged across a range of values and factors, and did not fit neatly into a subset of categories (Table 7). We noted that while there is but one economic factor and one relational value on this list, factors such as *soil and/or land care* and *health* have intrinsic economic and relational values qualities. This implies that practitioners' reasons for adopting regenerative agriculture can be complex and require an integrated view of the relationships across factors to better understand drivers for adoption.

TABLE 6 The percentage and number (in parentheses) of interviewees that conveyed a synergy or tension around their decision to adopt regenerative agriculture (RA).

Synergies and tensions factors	% (n) of interviewees	Definition with topics and examples
<i>Synergies</i>		
View of an inherent, mutually beneficial link between land, people, and ecosystems	83.9 (26)	Understanding the dependence between people and ecosystems for well-being. "Acknowledging balance, returning to earth, in exchange for its resources, we are able to work toward regenerating our lands"
Synergy of balance between economics and the RA vision or lifestyle	61.3 (19)	A belief that financial security and RA practices have a mutually beneficial relationship. "Nothing happens in a vacuum. Community, financial, nature. They all they all lend to why our family is using RA practices"
<i>Tensions</i>		
Industrial vs. non-industrial agriculture	87.1 (27)	A view of opposition between RA and conventional farming practices and/or economic relations. Opposing the "extractive paradigm"
Vision of RA future vs. economic potential	80.7 (25)	Seeing a potential trade-off between financial gain and RA practices and lifestyle. "Most benefits aren't measured in financial return"
Privilege vs. a lack of privilege	51.6 (16)	Recognizing the role of one's economic status and ability to practice RA. "Privilege to grow up nearby nature" or "having another job"
Old vs. new practices, paradigms, and/or practitioners	32.3 (10)	Seeing the benefits and/or challenges of transitioning to RA given one's past conditions. "Patience for myself as a new farmer"
Overcoming human vs. nature paradigm	29.0 (9)	A need to shift society towards a "with" rather than "control over" nature. A need for "technologies that helps us merge with nature"
Vision of abundance vs. scarcity in agricultural practice	25.8 (8)	Having a mindset of potential rather than of loss or struggle in an RA transition in the face of pressure to conform to "traditional" practices
Cooperation vs. competition among practitioners	25.8 (8)	Encountering pushback (or not) from other practitioners in transitions to RA. "We're all there to be supportive and not compete or directly harm someone"
Compromise and tradeoffs in practices	25.8 (9)	Needing to choose between RA or non-RA practices to achieve personal well-being. "Is this a better economic decision? Are our decisions moving us towards better alignment with our values?"
Altruism vs. non-altruism	16.1 (5)	A sense that practicing RA is (or is not) a selfless act. "We need to protect the planet" or "I do not agonize over saving the world"

A summary of common perspectives and example quotes are provided for each value.

These findings drew from interview questions where practitioners were asked to describe their primary drivers for adopting regenerative agriculture. In responding, practitioners tended to see the question as an exercise of thinking about how their priorities emerged. Some named more than one factor, but all tended to view the question as a summarizing question of the whole conversation.

We also examined common combinations of values and factors across the four categories of relational values, and economic, environmental, and additional factors, not including synergies and tensions (Table 8). With 61.3% of interviewees represented, the combination of *social responsibility, soil and/or land care, productivity and/or yield*, and a desire to *make things better or improve conditions* was the highest. Together, these findings convey the variety of relationships between values and factors. Many of these combinations closely overlap with the individual primary drivers practitioners identified (Table 7).

How do practitioners report that relational values, and economic and environmental factors interact in driving their adoption of regenerative agriculture?

The answers to this question represent the key themes and summative findings from our results and analysis as a whole. These ideas also inform the discussion that follows, and lend insight into how values and the adoption drivers we explored may be influencing food systems transitions relative to regenerative agriculture, and beyond.

1. Improving or maintaining the "health" of communities, ecosystems, and oneself or one's family was a primary driver for the adoption of regenerative agriculture for many practitioners.

Combining personal health and well-being (including physical or medical, farmland, and financial) with collective health and well-being (including ecosystem and societal) was central to most (90.3% of) practitioners' reasons for practicing regenerative agriculture. For some, health was a driver prior to adoption, while for others health emerged as a benefit of living the lifestyle of regenerative agriculture and furthered their desire to continue practicing. A vast majority of interviewees (93.5%) discussed health in one way or another in the context of drivers for adoption. When discussing health, frequent word combinations included "soil health" (61.3%), "healthy food" (32.3%), "human health" (29.0%), "personal health" (22.6%), "mental health" (16.1%), and a "health journey" (16.1%). Practitioners also discussed health in a context of financial well-being, as part of supporting healthy food access, farm viability, and wider systems change. For example, one interviewee shared:

"If you can find the right supply chain, you can then raise more animals and get more dollars for them in your pocket. Which therefore allows you to continue creating positive change because you can build more infrastructure or hire more people to... continue the cycle and increase *economic health*, thereby increasing productivity then by increasing your market and then increasing your sustainability and your ability to carry on the [farm and] your economic viability. So I see a lot of synergies there."

'Health' was the most observed synthetic driver across all factors. Many interviewees saw all aspects of health, from the personal to the collective, as irrevocably linked, even though they may personally focus on a single aspect of health over others. The range and spectrum of interests in health appears to mirror an understanding of social and

TABLE 7 The percentage and number (in parentheses) of interviewees that noted a value or factor as a primary driver of adoption of regenerative agriculture (RA).

Value or factor identified as a primary driver	Value or factor type	% (n) of interviewees
Health and/or healing	Additional	67.7 (21)
Social responsibility	Relational value	38.7 (12)
Soil and/or land care	Environmental	38.7 (12)
“Make things better” or improve conditions	Additional	32.3 (10)
Systems thinking and/or big picture and/or holistic worldview	Additional	29.0 (9)
View of an inherent, mutually beneficial link between land, people, and ecosystems	Synergy	25.8 (8)
Ecosystem well-being	Environmental	25.8 (8)
Climate change	Environmental	25.8 (8)
Non-domination of or working with nature (vs against)	Additional	22.6 (7)
Industrial vs. non-industrial agriculture	Tension	22.6 (7)
Profitability	Economic	22.6 (7)
Social-ecological systems change	Additional	19.4 (6)
Moving towards a future or life that we or “I” seek	Additional	19.4 (6)
Synergy of balance between economics and the RA vision or lifestyle	Synergy	19.4 (6)
Good life	Value	19.4 (6)
Generational eco-stewardship	Value	19.4 (6)

A value or factor is included where at least 19% (n = 6) of interviewees identified this factor as a primary driver.

TABLE 8 A selection of the most common combination of values and factors across four major coding categories.

Values factors	Environmental factors	Economic factors	Additional open factors	% (n) of interviewees
Social Responsibility	Soil and/or Land Care	Productivity and/or Yield	“Make things better” or improve conditions	61.3 (19)
Social Responsibility	Soil and/or Land Care	Profitability	Systems thinking and/or big picture and/or holistic worldview	58.1 (18)
Social Responsibility	Soil and/or Land Care	Productivity and/or Yield	“Health” and/or healing	58.1 (18)
Social Responsibility	Soil and/or Land Care	Markets, Marketing, and Farmer’s Markets	Teaching and learning about RA	58.1 (18)
Social Responsibility	Soil and/or Land Care	Livelihoods	Systems thinking and/or big picture and/or holistic worldview	54.8 (17)
Social Responsibility	Ecosystem Well-being	Profitability	Systems thinking and/or big picture and/or holistic worldview	54.8 (17)
Social Responsibility	Ecosystem Well-being	Livelihoods	Systems thinking and/or big picture and/or holistic worldview	51.6 (16)
Social Responsibility	Ecosystem Well-being	Profitability	Social-ecological systems change	51.6 (16)
Good Life	Soil and/or Land Care	Productivity and/or Yield	Systems thinking and/or big picture and/or holistic worldview	45.2 (14)
Connectedness with nature	Soil and/or Land Care	Productivity and/or Yield	Teaching and learning about RA	45.2 (14)
Good Life	Soil and/or Land Care	Profitability	“Health” and/or healing	45.2 (14)
Good Life	Soil and/or Land Care	Productivity and/or Yield	“Make things better” or improve conditions	45.2 (14)
Social Responsibility	Soil and/or Land Care	Productivity and/or Yield	Non-domination of or working with nature (vs against)	45.2 (14)
Social cohesion through nature	Ecosystem Well-being	Profitability	“Health” and/or healing	41.9 (13)
Eco-focused Stewardship	Soil and/or Land Care	Profitability	“Make things better” or improve conditions	41.9 (13)

Each row represents a combination where all came across in a single interview, sorted by percentage and interview count. We selected these combinations to convey the range of top relationships between values and factors.

ecological systems interdependence. For example, one practitioner said, “There is no public health without ecological health. I saw regenerative agriculture as a way to achieve both.” Many practitioners also shared that improving ecosystem, community, and/or personal health was vital for the *good life* they seek, though they also noted, in parallel, that farming is at times a difficult and stressful endeavor regardless of the practices employed.

Health was also a significant feature of interviewees’ desire to *make things better*. For example, some practitioners focused on local

or global food security as part of improving human health. Improving a range of social and environmental conditions while supporting a healthy future (shared and/or personal) was central to many interviewees’ understanding of what it meant to practice regenerative agriculture.

2. Relative economic privilege was correlated with different drivers for adoption, particularly across two extremes: privileged idealism and less privileged necessity.

Across interviewees, two demographic groups emerged relative to economic privilege, which correlated with different drivers for adoption. The first were those in relatively privileged positions compared with other practitioners. This included those with advanced degrees, financial stability, or secure land tenure. Many individuals in this group emphasized large-scale drivers for adoption, such as planetary well-being and wide-scale social systems change. For example, those emphasizing “saving the planet or humanity” generally landed in the privileged category and held a large-scale view of the potentials of regenerative agriculture.

A second demographic group were those in relatively less privileged positions compared with other practitioners. This included those wishing to maintain a farming livelihood, achieve land tenure, or protect a multi-generational way of life in the face of a struggle or external financial pressures. Many individuals in this group emphasized incremental change, trade-offs among different practices, and steady transitions towards regenerative agriculture. Those who wished to “save or not lose the farm” tended to be less privileged, and often focused on maintaining a lifestyle or culture of farming amidst economic turmoil. Some practitioners mentioned the words “privilege” (22.6%) and “struggle” (22.6%) explicitly. These terms were often linked with the *livelihoods*, *rural economies*, and *markets*-related economic factors, depending on context. For example, one interviewee shared:

“I’ve seen these extremes... it’s those on the bell curve, if we are talking about some kind of privilege, or signifying economic privilege, it’s either the people who are losing everything, or the people who have everything and see a problem with what’s there. So it’s either a kind of youthful idealism or some kind of idealistic guiding light, or people who are close to the cliff’s edge, and realize we have got to do something else. These are people who are asking questions. Most folks in the middle aren’t quite motivated to ask questions.”

Few practitioners presented life experiences outside of this dichotomy. Yet, despite their differences, practitioners’ visions for the future and mindsets around social-ecological change appeared to be similar. Examples of similarities included a willingness to take risks in experimenting with (new) regenerative techniques, an awareness of social and ecological systems interdependence, a desire to influence both personal and collective well-being through their practices, and a belief in synergies between economic and ecological well-being in a functioning regenerative farm. A sense of urgency around addressing local and global issues, both social and ecological, further unified interviewees’ perspectives across groups.

As a driver for adoption, economic, social, and/or environmental extremes or instabilities may create the conditions for a shift in one’s agricultural practices. Improving financial and ecological health was seen as a way to avoid the loss of land, livelihood, and/or farming culture in the face of ecological degradation and financial pressures from land speculators and large corporations. Our data suggests that garnering enough money to create a foundation for practicing regenerative agriculture was a necessary condition, and at times a primary aim, but was not the solitary aim for adoption or ongoing agricultural practice.

3. Shifting away from industrial agriculture was a moral, economic, and environmental imperative for many practitioners.

Most interviewees (87.1%) conveyed an explicit opposition to what they called “industrial” forms of agriculture as a driver for adoption of regenerative agriculture. Primary reasons included opposing the use of synthetic fertilizers due to their perceived negative influence on ecosystems and human health, and a desire to challenge the hegemonic influences and behavior of extractive corporations, since they perceived industrial agriculture to be part of a pattern of economically and ecologically destructive social systems. A desire to oppose industrial methods did not, however, emerge exclusively as an altruistic principle. Many practitioners saw a shift away from industrial food production as a benefit to personal health and well-being. Many also believed, more altruistically, that industrial agriculture and related economic influences posed a threat to their community’s way of life and the well-being of the planet.

For many practitioners, industrial agriculture was an embodiment of the issues negatively affecting social and environmental well-being. *Challenging the status quo* of agricultural practice was a primary reason for the adoption of regenerative agriculture, and seen as a vehicle to help *make things better*. Many also saw related changes as urgent and necessary to “save” society and planetary ecosystems from collapse. In addition, conveying the potential benefits of regenerative agriculture to others through *teaching and learning* or by increasing the *visibility of regenerative practices* rooted in an anti-industrial sentiment, as well as a potential for economic gain and desires for wide-scale systems change. This paralleled concerns that corporations may “greenwash” or co-opt the term ‘regenerative agriculture’ for profit without truly attending to the social and environmental aspects. Interviewees’ perspectives on industrial agriculture explain, in part and by inverse, their choices to adopt regenerative agriculture and participate in related movements and networks.

4. A capacity for systems thinking and/or an awareness of social-ecological interdependence made adoption of regenerative agriculture more likely.

An awareness of social-ecological systems relationships, or whole systems thinking (Sterling, 2003; Meadows, 2009) was fundamental to many interviewees’ understandings of regenerative agriculture. For many, achieving “systems awareness” came in advance of adoption and was part of a personal journey in finding alignment with its practices. As one said in this context, “it made sense.” A capacity for systems thinking also correlated with an awareness of social-ecological systems interdependence. Many believed that “systems of nature” were points for reverence, learning, and gaining knowledge, whereas “social systems” should be our collective focus for action, change, and transition.

As noted, long-term goals for many practitioners included regenerating soils, ecosystems, and societies. These goals were often seen as achievable through systemic shifts, over time. For example, industrial agriculture was often described as a primary example of out-of-balance social and ecological systems relationships. Shifting these problematic systems through regenerative agriculture was seen as a vital leverage point to achieve sustainability or “regeneration.” A capacity for systems thinking (and related awareness of

social-ecological relationships) and the potential to improve financial and environmental well-being nourished interviewees' sense of agency for achieving desired futures through the practices and adoption of regenerative agriculture.

In a context of ecological economics, many interviewees were guided by an idea of 'land as wealth' where improving soils to more productive levels represented an investment in long-term economic viability. As one practitioner noted,

"You're building a savings account, and sometimes you have to draw on that in a challenging situation. But you are generally always adding back into that battery of energy and capability of the land to survive and thrive. It's the bad times when you start to see regenerative farms thrive, they are the ones that look green right now, even though we have been going through a drought."

As a systems view of economics and social-ecological well-being, 'land as wealth' represents an idea that personal well-being is tied to the well-being of farmland. Cycles of improvement and "regeneration" are essential to this strategy, as well as a view of "money as energy" or capturing the "solar dollar." These views link the social (or financial) and the ecological, as soil and ecosystem health are seen as primary points for investing personal energy, land allocation, and spending. This systems-based, social-ecological worldview also appears to support resilience and agency in the face of personal struggles through a belief in the durability of systems, supported by an ability to *embrace experimentation*, and a view of *regenerative agriculture as a journey of emergence* rather than as a fixed set of practices or outcomes.

5. We found a range of peripheral factors driving adoption that may be valuable for future study.

Through our analysis, we identified many factors that appear to be primary drivers for the adoption of regenerative agriculture, yet we also found many peripheral factors that may have influenced adoption. Here, we provide a summary of notable additional factors that drove adoption for a relative minority of those interviewed. We do so, less to draw conclusions, but more so as starting points for future inquiry.

First, *farming is a difficult endeavor, regardless of practice* and does not guarantee personal health or well-being. Many practitioners stated that despite the added value of regenerative agriculture to one's lifestyle, farming of any kind is "hard" and has its drawbacks (41.9%).

Second, *social and ecological justice are essential perspectives in the regenerative movement*. This includes embracing indigenous knowledge and wisdom, and righting past and ongoing wrongs in agricultural practice. Many interviewees noted the importance of social- and/or eco-justice (41.9%), with some stating that regenerative practices draw on indigenous knowledge. Despite not having an explicit interview question, this topic emerged as a clear area of interest among practitioners. Based on the data, there was not, however, enough information to draw conclusions on the actual actions or practices guided by these interests, nor the extent to which these topics influenced decision-making or practice.

Third, *teaching and learning about regenerative agriculture* was an important motivation for many practitioners (71.0%). The potential for personal gain (e.g., economic gain or sense of well-being) and furthering the movement (e.g., through consumer awareness) was a driver for ongoing practice.

Fourth, *technology can be viewed as a solution or a detriment* to efforts to regenerate social-ecological systems. Of those who mentioned technological solutions or innovations (19.4%), some highlighted the potential benefits of these innovations while others discussed how some modern technologies could lead to further issues and negative outcomes.

Finally, *seeing farming practice and agricultural transition as a path to personal growth* was central to some interviewees' experiences in practicing regenerative agriculture (12.9%). This supports the idea that farming is more than a livelihood, or a series of extrinsic practices, but may also be viewed as a practice of personal growth and awareness as part of an evolving human experience.

Discussion

Summary of Key results

Practitioners reported many factors that influenced their decisions to adopt regenerative agriculture. These factors included relational values, and economic and environmental factors, as well as synthetic factors across these areas. These factors can be characterized as material and non-material, diverse and integrated, and focused on both small- and large-scale areas of action. Key cross-cutting findings were:

1. Practitioners expressed a desire to improve the health of people, soils, and ecosystems;
2. Relative economic privilege influenced practitioners' reasons for adoption or transition;
3. Many practitioners desired a societal transition away from industrial agriculture;
4. and holding a systems view of social-ecological relationships was part of many interviewees' understanding of the potential benefits of regenerative agriculture.

Individual values and factors that most influenced interviewees' perspectives were: stewardship and care for people and places, achieving baseline economic stability, moving towards desired futures amidst 'unhealthy' social-ecological systems, and enacting social responsibility through care for land, soil, and ecosystems. Maintaining farming lifestyles and passing on ecologically healthy landscapes to future generations were also key drivers. Interviewees conveyed a blend of altruistic and non-altruistic tendencies around achieving global environmental health (e.g., mitigating climate change). Many of our findings complement the "14 attributes of food system sustainability" as described by [Kloppenborg et al. \(2000\)](#), and lend nuance and depth to these attributes in the context of discernible though wide-ranging reasons for adopting regenerative agriculture.

Building on these findings, we identified three key topics to discuss that can expand understanding and action around food systems transitions. The first is exploring the relationships between practitioners' relational values and regenerative agriculture as a sustainable agriculture movement. The second is exploring the roles of definitions and diverse narratives in the emerging regenerative agriculture social movement. The third is exploring the connections between food systems transitions and the drivers for adoption of agricultural practices. These three topics help us examine regenerative agriculture as a social movement and sustainability transition, within the bounds of our data, towards inspiring future inquiry.

Relational values and understanding sustainable agriculture movements

As a research framework, relational values may be a valuable lever for understanding farmers' sense of agency around adopting more sustainable farming practices as well as participating in related agriculture movements. For example, our research drew relational values into an examination of economics and environmental well-being, and helped us identify drivers for adoption that may have been challenging to identify through other means. A primary example of this is our finding that 'health' can be seen as an organizing factor for practitioners' adoption of regenerative practices, one that integrates ecosystems, soil, planet, self, family, community, and social systems - and relates closely to how many interviewees' described the "good life," vital to eudaimonia (Chan et al., 2016) or happiness and well-being. Working towards a healthy life aligned with many interviewees' moral compasses, financial goals, and desires for balanced relationships with the whole social-ecological system. This built upon an awareness of negative environmental and human health impacts of industrial agriculture as growing concerns (Horrigan et al., 2002; Nicolopoulou-Stamati et al., 2016). In this way, health can be viewed as an integrated concept linking values, economic, and environmental factors towards the adoption of farming practices and participation in regenerative agriculture as a social movement. Using a relational values lens as part of this research was essential to accessing and elucidating these findings.

While relational values are not the only types of values driving participation in sustainable agriculture movements, they do convey unique qualities. Most keenly, they highlight factors at the interface of social-ecological relationships. For example, one well-cited, qualitative interview study focused on the adoption of conservation practices used a *values* perspective, but not a *relational values* perspective, with a primary finding that, "Farmers who were motivated by off-farm environmental benefits and those who identified responsibilities to others (stewardship) were most likely to adopt conservation practices," whereas, "Those farmers who focused on the farm as business and were most concerned about profitability were less likely to adopt practices," (Reimer et al., 2012, p. 29). Our analysis, focused on the interplay between relational values and non-values factors, conveys a more nuanced relationship between farmer decision-making, values, and economics. In the case of regenerative agriculture and our interviewee pool, the adoption of practices was driven by a belief in the possibility of achieving *both* desired economic and environmental futures. We see this finding as an explanation for farmers' sense of agency and as a driver for adoption, features elucidated because of the relational values approach.

As a further example, one systematic literature review focused on farmers' adoption of sustainable innovations claimed that:

"It emerged that the path to adopting sustainable innovations can be driven by environmental values; for example, when comparing organic and conventional farming, organic farmers have a stronger environmental view and are more likely to take less into account economic gains. On the contrary, complexity of innovation, a high degree of innovation aversion, and a low perceived control over innovation are among the core barriers to the innovation adoption," (Rizzo et al., 2023, p. 1).

This finding elucidates two important points: Firstly, a perceived disjointedness between environmental and economic value propositions, and secondly, the benefits of agency (or lack thereof) in the adoption of practices. Through a relational values lens, our findings tell a different story. We found that interplay between economic and environmental values was essential to many practitioners' decisions to adopt regenerative agriculture practices, and that regenerative agriculture offered a sense of agency to guide the path of innovation. These examples highlight some of the differences between (and perhaps benefits of) relational values research when compared with other values-based forms of inquiry.

Building on these ideas, a relational values lens may aid policy research and decision-making focused on community relevance. For example, our coding of relational values helped to elucidate that practitioners saw regenerative agriculture as an ongoing process of becoming 'regenerative' rather than as a fixed result. We also found that using a relational values lens helped to enhance our insights into other, non-values factors driving adoption, for example, lifestyle choices in relation to land and place that are both values- and economically-derived. While, ideological and material concerns (e.g., values and economics respectively) are common drivers for participation in sustainable agriculture movements (Lejano et al., 2013), values can be difficult for research participants to talk about and challenging to draw into decision-making (Satz et al., 2013). We drew upon best practices in research design to help us overcome this challenge (see Chan et al., 2012; Gould et al., 2015), and given the potential benefits for inquiry, we encourage others to continue experimenting with these methods.

The relational values approach also allowed us to identify findings that were not completely positive or beneficial for practitioners, in the sense of challenges faced in adoption and transition. For example, several interviewees discussed the non-altruistic or non-"do-gooder" aspects of decision-making, such as saving their farms for "tradition" as well as for personal economic or necessary environmental purposes. There were also struggles of engaging with regenerative agriculture on a personal level, including the unknowns and risks of transition amidst economic and natural resource demands of doing so effectively. Furthermore, an increasing awareness of regenerative agriculture's roots, which in some cases draws on the practices of indigenous peoples and people of color, highlights the need for social justice awareness in policy-making (Shannon, 2022) and research on regenerative agriculture (Sands et al., 2023). Of our interviewees, 41.9% discussed social- and/or eco-justice in some form and in relation to their relational values, economic concerns, and shifting identities as farmers.

In summary, our findings suggest that relational values research can support nuanced insights into topics that economic- or ecologically-focused inquiries alone may not capture. Expanding relational values' use as a research lens may be of benefit to decision-making around food-related sustainability transitions.

Definitions, narratives, and inclusivity in regenerative agriculture

As regenerative agriculture increases in popularity, a need for definitions to guide policy decision-making has also grown. This is a challenging prospect due to the range of possible definitions and

narratives surrounding the practice of regenerative agriculture, as well as the multiple dimensions that play a role in its conception and practice (Newton et al., 2020; Schreefel et al., 2020; Giller et al., 2021; Sands et al., 2023). This observation mirrors struggles in the codification of ‘organic agriculture’, where a synthetic definition was necessary for federally-overseen consumer labeling, yet many practitioners active in the movement prior to policy-making found incongruence between their definitions and values, and the definition which was ultimately adopted federally (Lejano et al., 2013).

Relative to regenerative agriculture, interviewees tended to convey definitions with blurred boundaries that were dynamically evolving with their personal journeys as farmers and human beings. This relates to a widely explored idea across diverse agricultural social movements - that the productive dimension of practices is only one aspect that needs to be considered when understanding farmers’ choices and why they engage with specific ideas and practices (Moore, 2017; Janker and Mann, 2020). Our findings show that definitions focused only on outcomes may be insufficient to capture the range of drivers and personal identities guiding the practice of regenerative agriculture. Building on a relational values lens, these results suggest coherence with an “ethic of care” as proposed by Seymour and Connelly (2023). By framing ethics of care in a context of relational values we can lend a nuanced view to the former, suggesting a mutuality between actors (e.g., people *with* place) rather than a monodirectional stance (e.g., people *for* place) a relevant distinction in fostering multi-level sustainability transitions (El Bilali, 2019). As definitions take shape in policy circles, we argue that ethics of care, health, and relational understandings of place are critical to ways to frame, and possibly enable, action and agency around transitions in food systems.

Definitions also draw and build on emerging and intersecting narratives across actors. To extend related conversations, we offer several key narratives interviewees reported relative to the adoption of regenerative agriculture. First and foremost was resistance to the regime of industrial agriculture. This was expressed as a major reason for seeking a promising alternative that would at once meet economic, environmental, and values aims. We also see this as a possible reason why practitioners sought networks beyond the dominant food supply chains, to support resource sharing and community-building amidst transition. Second, was the idea of righting past wrongs committed by society against people, place, and planet. These wrongs include environmental degradation, lack of access to healthy food, and a loss of resilient local agrarian communities. Regenerative agriculture was seen as a way to foster repair while also reaching for desired futures. Lastly, those interviewed tended to describe interdependence between people and ecosystems as a fundamental element of successful agriculture and building desired lifestyles, and favored adaptive approaches to developing solutions to social-ecological challenges. Similarly, many of our interviewees were concerned about large agricultural corporations’ co-optation of the term ‘regenerative agriculture’, rendering it less meaningful through greenwashing by diluting its ‘regenerative’ purpose.

Our findings may be helpful in critically assessing emerging narratives and definitions around regenerative agriculture, to help distinguish discourses based on agrarian community values and those aligned with corporate agendas which are contrary to collectively desired futures. This is necessary to discern implicit differences between regime and niche actors in the co-evolving processes in

which the narratives underpinning regenerative agriculture are being shaped (Hendrickson and James, 2016; Gordon et al., 2022). Our work positions the human dimension at the center of regenerative agriculture practice, revealing this central aspect of related food systems transitions and transformations (Seymour and Connelly, 2023). For example, claims that regenerative agriculture lacks a clear political dimension (Tittonell et al., 2022) may need reconsideration. When considering relatively narrow definitions it is possible to see regenerative agriculture as apolitical. However, our findings suggest that practitioners have strong feelings about governments and corporations relative to agricultural practice (e.g., that governments are not doing enough, and corporations are trying to co-opt and control). Other studies also highlight this political dimension (e.g., Dipu et al., 2022; Kenny and Castilla-Rho, 2022). This makes a transition to regenerative agriculture, seen as a form of collective action and an embrace of personal agency, a political act of seeking personal and societal well-being.

While our research uncovered the everyday struggles of our interviewees, is it clear that the segment of the regenerative agriculture movement we examined is but a partial view of the whole. For example, we note the distance from narratives found in other social movements and peasant movements (e.g., La Via Campesina) in which access to natural resources, self-determination in their territories, and the right to produce their own food appear as critical issues (Rosset and Altieri, 2017). There is also concern that while it is arguably a grassroots movement, the dominant narratives of regenerative agriculture may also be erasing and appropriating the contributions of marginalized peoples to the movement (Bless et al., 2023; Sands et al., 2023). Our findings can serve as a starting point for further inquiry into these complex dimensions of the movement, and serve as a call to avoid a homogenization of perspectives into fixed definitions without careful consideration as to how representation in related discourses has (or not) been achieved.

Food systems transitions and drivers for adoption of regenerative agriculture

From a transitions perspective, in terms of socio-technical systems change, we note two dynamics that are keenly relevant. The first is the inspiration from and within a movement (or “niche”) of practitioners to adopt regenerative agriculture as an alternative, more sustainable set of farming practices. Our results provide ample evidence that values - of different qualities and in different combinations - are a strong driver for the adoption of regenerative agriculture, and are partly the basis of practitioners’ individual agency. The second dynamic, more oriented at systems (or regime-level) change, concerns the ability of farmers, as part of the regenerative agriculture movement, to mobilize values to change and subvert the underlying rules and logics of the dominant agri-food system (e.g., through collective agency in seeking desired futures). With regard to this second dynamic, we offer the following reflections.

A large proportion (87.1%) of interviewees expressly opposed what they call “industrial” agriculture. This challenges and erodes its support among practitioners. Of note, this challenge has instrumental benefits (e.g., personal health and well-being) and intrinsic benefits (e.g., ecosystem health and stewardship). This demonstrates the transformative potential of regenerative agriculture, because it aligns

with both practitioners' self-interest as well as more universal values. Accordingly, our findings show how culture (specifically the values dimension) can provide a basis for a "new mode of action" that is distinct from established modes of action (Swidler, 1986). Shared values are a reference point that practitioners can orient their strategic agency towards and compare their current practices against (e.g., Emirbayer and Mische, 1998). For example, new modes of action in regenerative farming can come about through the interplay of value orientation, practical experimentation, and institutions as shown in a case of Dutch farmers (Wojtynia et al., 2023). This complements an emerging research priority in the sustainability transitions literature to better understand individual perspectives and behavior (Kaufman et al., 2021).

The fact that practitioners' economic standing stood out as a key factor driving adoption (i.e., well-off practitioners had the luxury to "experiment with" regenerative agriculture, whereas those under great economic pressure did so out of necessity) underlines different possible dynamics of values influencing agency to adopt a new farming style. This finding expands on research looking at drivers for adoption of agricultural innovations in a context of motivating factors (Rizzo et al., 2023). This economic dichotomy can also provide a pragmatic departure point for understanding the adoption of regenerative agriculture and related food systems transitions. Practitioners' alignment with certain values and related economic positions may be a leverage point for government agencies and value chain actors working on food systems transitions. Provided that such actors have an interest in an equitable and truly ecologically sustainable transition through regenerative agriculture, they may be well-placed to identify farmers who are likely to find sustainable agriculture an attractive proposition, and draw effectively on the science about its practices (e.g., Drawdown, 2021) to support effective social and ecological transitions.

Returning to definitions in this context, most interviewees embraced a relatively fluid definition of regenerative agriculture (in terms of practices), and emphasized its emergent nature. This has positive and negative implications for a social movement engaged in a sustainability transition. On the one hand, an open-ended or loose definition can allow practitioners with diverse understandings and at different stages of practice to join the movement. This can lend momentum and enhance capacity to challenge incumbent food regimes, while overcoming perceived "social risks" and barriers to a sense of belonging or reciprocity among practitioners adopting related practices (Petersen-Rockney, 2022). On the other hand, a loose definition can lead to onboarding practitioners who have a limited or biased understanding of the movement's values and practices. They may join such a movement because they think they are already close to farming regeneratively when in fact they are not. This fluidity of definitions could also make it easier for powerful, incumbent actors to co-opt the movement and promote definitions that have little or no transformative potential or support unsustainable, rigid, or destructive practices. This tension is of particular note for regenerative agriculture, where interviewees expressed concerns about greenwashing and the negative function of incumbent food systems regimes (e.g., corporations engaged in industrial agriculture who are experimenting in the regenerative space).

This tension between strict and open-ended definitions suggests a clash between the value-oriented strategic agency of institutional entrepreneurs who wish to improve justice and sustainability in food

systems, and profit-oriented entrepreneurial strategy of those who may use regenerative agriculture to further their own, ultimately unsustainable agendas. This indicates that the role of institutional actors, who advocate for widespread adoption of regenerative agriculture, may need to evolve to safeguard the values of this movement. Furthermore, an embrace of critical voices from activism and academia (e.g., Calo, 2020) is becoming increasingly important, however uncomfortable that may be for some pioneers and promoters of regenerative agriculture. Our findings show that both achieving desired futures and perceived societal tipping points can be incentives for shifts in agricultural practices, as well as points of ideological coherence despite competing personal, local, and regional agendas (Baur, 2022).

In the context of sustainability transitions and value-oriented strategic agency, studies show that farmers seek advice and information from other farmers more than from value-chain representatives including extension agents, or NGOs (Feola et al., 2015; Dessart et al., 2019). Here we can see how agricultural transitions present as "fractal scaling," which describes a transformation process based on shared values as transmitted through personal relationships in embedded social spheres, for example, family and kin, friends and acquaintances, peers, and professional networks (O'Brien et al., 2023). Our findings suggest that coherence of values among practitioners of regenerative agriculture may be a key to identifying as a participant in the movement (e.g., health for people, soil, and ecosystems), while also being co-created through an ongoing process of fractal scaling (e.g., comfort with experimentation and emergence). This complements our finding that many saw regenerative agriculture as a way to bypass "failing" policy structures and collectively achieve desired futures relative to sustainability (Carlisle, 2016; Carlisle et al., 2022). Noting this values-based sense of belonging as a driver for participation in the regenerative agriculture movement is a key finding of our work relative to food systems and sustainability transitions.

Caveats and limitations of this study

Our findings result from an exploratory effort to better understand the values and drivers underlying the adoption of regenerative agriculture practices in the United States. Our sampling method may not have fully captured the regenerative agriculture movement in terms of definitions, practices, relational values, and economic and environmental factors, and geographies in a number of ways. First, we drew primarily on contacts with the Savory Global Network and Mad Agriculture, and these sources and their associates may have limited or biased our sample pool and influenced our range of results. Second, the sample pool drawing from these sources is a fraction of those who identify as practitioners of regenerative agriculture in the US. This may have influenced the range of ideas, values, and factors reported to us as well as their relative importance among factors, thereby limiting representation of key demographics and worldviews in this study. We do, however, see these methods as a satisfactory starting point, to be complemented by future studies that reach beyond these limitations and into additional facets of this social movement.

A third limitation is we did not study those practicing other farming methods as a point of comparison, and cannot claim that our findings are unique to regenerative agriculture. It is possible that had we interviewed practitioners of other forms of agriculture,

including “industrial” or more conventional forms of agriculture, we would have found that they were motivated to adopt these practices for very similar (or entirely different) reasons as those interviewed. Fourth, conducting interviews by Zoom may have limited the participation of any candidate interviewee who did not have access to digital technology, which may in turn have constrained the sample pool. Relatedly, our data collection took place during the COVID-19 pandemic, which may have influenced our sample pool and interviewees’ responses to questions in any number of ways. Finally, we allowed interviewees to self-identify as practitioners of regenerative agriculture. Given the diversity of ways in which it can be defined, we do not know how similar interviewees were in terms of the practices they used nor the outcomes they achieved on their farms, nor do we know how much they differed (if at all) from other practitioners who do not identify with the term ‘regenerative agriculture’. We only know that all were drawn to the term ‘regenerative agriculture’ to define their model of farming.

We also acknowledge that our analysis may have a range of possible interpretations. While our coder did his best to be consistent, it is likely that our findings are at least in part biased by our own perspectives as researchers. This may have influenced our results as well as our interpretations. We believe, however, that our data shows that practitioners held some relative preferences across the categories of findings, and that our methods and analysis are transparently conveyed. We also note that discussions of “nature” relative to “humans” can imply a false dichotomy - one where people and environmental systems are thought of separately. Philosophers have long debated these issues (Cronon, 1996). Throughout this research we acknowledge these issues and believe that our focus on relational values, which have an intrinsic quality of connection between people and place, has helped to alleviate some of the challenge of discussing humans and nature in any seemingly dichotomous way.

Policy implications

In this study, we present a range of possible drivers for the adoption of regenerative agriculture across relational values, and economic and environmental factors. While economic and environmental factors will always be central considerations for transitions in agriculture, “policy must not neglect to acknowledge that the transition to sustainable agriculture will also be a cultural and social one” (Forbes, 2022). In this context, we offer the following recommendations for decision-makers interested in regenerative agriculture and food systems transitions:

- Consider the drivers we identified when designing incentives and regulations, particularly those that pertain to health of humans and ecosystems, as well as relational values, to complement policies that focus on markets and technology transfer.
- In particular, consider “health” as a unifying principle across stakeholder groups, and understand the range of possible forms of health that an agricultural policy may influence. For example, the *One Health* program of the US Centers for Disease Control and Prevention [CDC (US Center for Disease Control), 2022] and USDA Rural Development Program [USDA (United States Department of Agriculture), 2022] may consider how our findings could augment efforts to understand community needs and achieve solutions in agrarian contexts.

- Ensure that policies match a diversity of drivers. Some practitioners may be stimulated more by support for soil regenerating measures, others may respond better to incentives to take more social responsibility.

- Address the middle of the bell curve. If practitioners turn to regenerative agriculture (and perhaps other sustainable farming movements) primarily from the extremes of subsistence to economic prosperity, a lot may be gained by researching how to target the “average farmer.”

- Engage in a high-level strategic policy discussion on the future of the industrial food system. If farmers are turning away from it, and many for valid reasons (e.g., hostile take-over of family farms, appropriation, environmental destruction, etc.), decision-makers may consider how to work with rather than against these community-based needs and trends.

- Consider the demographics currently represented in the literature and support additional inquiry to include perspectives of those not well represented by current research.

Finally, in a context of food systems transitions, one way to frame the benefits that environmental systems provide to humans are as *ecosystem services* (Daily and Matson, 2008; Bhagwat, 2009; IPBES, 2019; IPBES, 2022). Our work suggests that five ecosystem services leverage points may be relevant to policy-making around regenerative agriculture. These leverage points are: 1) visions of a good life, 2) latent values of responsibility, 3) justice and inclusion in the conversation, 4) responsible technology, innovation, and investment, and 5) education and knowledge generation (Chan et al., 2020). While less specific than our earlier recommendations, these five points could augment frameworks that build on ecosystem services to develop agricultural policy initiatives with a focus on sustainability transitions.

Future research

There are a number of opportunities for future research to build on this study. First, is to closely consider the interface between health, as a motivation for transition, and agricultural practices. One promising area of inquiry is reducing eco-anxiety and solastalgia, defined as “the distress caused by environmental change” (Albrecht et al., 2007). The American Psychological Association (APA) has identified debilitating stress caused by eco-anxiety as an emerging and pressing issue (Clayton et al., 2017). Example causes with relationships to agriculture include natural disasters, loss, disturbance, and climate change (Clayton et al., 2017; Pihkala, 2020). Supporting agency has been shown to increase a sense of hope, which can alleviate eco-anxiety (Chawla, 2020; Pihkala, 2020). For many interviewees, practicing regenerative agriculture and participating in the social movement correlated with a sense of agency around personal and societal well-being, and offered hope for achieving desirable social-ecological futures. While we cannot claim that practicing regenerative agriculture and participating in the social movement reduces eco-anxiety, we see this as a valuable area for future study in the context of sustainability transitions, particularly considering the role of relational values in achieving these aims.

A second area for future study is understanding the drivers for adoption and transition across a wider range of demographics, including less privileged practitioners and those from marginalized groups. This highlights a need for more place-based research to understand the full range of drivers for adoption, as well as their

implications in different contexts. Third, there is a need to understand how values, and economic and environmental factors can be effectively integrated into policy and decision-making. Understanding the degree to which relational values influence the adoption of agricultural practices would be a key step. Similarly, future studies could investigate how different civil society organizations (e.g., farmer movements, value chain actors, and government entities) mobilize different understandings of regenerative agriculture to attract practitioners and undertake institutional work.

A fourth avenue for further research concerns the social dynamics behind one practitioner inspiring another to adopt a different farming style. Research has shown that the most convincing source of information for farmers are other farmers (Rogers, 2005 based on research conducted in the 1940s and 1950s). Our results clearly indicate the importance of relational values in the adoption of regenerative agriculture, yet the scope of our study did not allow us to examine how practitioners communicate these values with each other within the networks we sampled or how that may influence adoption and network participation. Lastly, our findings may be useful for identifying how regenerative agriculture compares with other social movements and agricultural practices, offering opportunities to explore the transformative potential and limitations of these movements. We believe this study can serve as a reference point for engaging with these questions, particularly in the context of relational values, adoption drivers in sustainable agricultural movements, and food system transitions.

Conclusion

This research has explored how relational values, and economic and environmental factors may, together and separately, influence the adoption of regenerative agriculture among practitioners in the United States. We found that improving the health of people, communities, ecosystems, and soils, separately and as an interrelated whole, is a primary driver of adoption for many practitioners of regenerative agriculture. We have also found that a relational values lens contributes an important angle to food systems research that can highlight policy-relevant factors that may otherwise be challenging to identify. Given the increasing importance of regenerative agriculture in the food system discourse, and related topics of climate change and food security, this paper represents a timely contribution to scholarship. Our findings, however, represent only a segment of the regenerative agriculture movement, and are just a beginning in drawing out the range and relative importance of various drivers in its adoption. Studying the full scope of this social movement, and why it has gained traction as an emerging transition in the food system, may lead to more effective and egalitarian food systems policies around regenerative and sustainable agriculture that are in alignment with both global aims and underlying community needs.

Data availability statement

The original interview data presented in this article is not publicly available to protect the identities of interviewees and to maintain compliance with our ethics board (CU Boulder IRB). Requests to access the datasets should be directed to LF-G, Lee.FG@colorado.edu.

Ethics statement

The study was approved by the Institutional Review Board of the University of Colorado Boulder (protocol # 21-0288).

Author contributions

LF-G: conceptualization, methodology, investigation, data curation, formal analysis, writing - original draft, writing - review & editing, and project administration. NW: framing the paper, introduction writing and editing, secondary analysis, discussion writing, and overall editing. SD-O: framing the paper, introduction editing, secondary analysis, discussion writing, and overall editing. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fsufs.2023.1070518/full#supplementary-material>

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