Appendix C: Sociomaterial Practice Theory Codebook

Practice Elements Codebook

Meanings Barrier

Cultural beliefs, dominant narratives, or social norms that undermine or challenge the legitimacy of regenerative agriculture. These barriers may appear as skepticism toward nonconventional methods, other social or cultural beliefs that contradict with regenerative visions, or assumptions that regenerative farming is impractical.

Illustrative Quotes:

- "…in the US…people spend…10% [of income] on food. In other parts of the world, it is like 30, 40, 50%." (Louis, Interview)
- "…there is an interesting push and pull in terms of these smaller New England kind of communities where they do really want an influx of young people and, but also maintenance of farming practices, but also to maintain a rural character." (Achilles, interview).
- "…a lot of people are the most successful farms are definitely also the most stressed out farms… we're very nervous about messing with that kind of thing, especially when it's some essentially newbie farmer coming to them with this semi hokey kind of idea." (Achilles, Interview)

Meanings Facilitator

Cultural stories, emotional attachments, ethical commitments, or identity motivations that positively frame regenerative agriculture. Motivations may include land stewardship, spirituality, climate action, ancestry, justice, or personal transformation.

Illustrative quotes:

- "This is a small way to participate in a green future." (Achilles, Interview)
- "Farming brings me closer to my ancestors and how they lived with the land." (Maya, Interview)

- "…I've thought a lot about that…I think it has to do with people feeling connected. And one thing that's really special about farms is that they can connect people to the environment in a very, like spiritual grounding way." (Nathaniel, Interview)
- "What's feeding your soul?" (Stella, Interview)

Material Barrier

Physical, environmental, economic, or infrastructural constraints that limit regenerative practices. This includes difficulty in paying oneself and employees a fair wage, degraded land, flooding, insufficient equipment or processing space, etc.

Illustrative Quotes:

- "We don't have a proper heated greenhouse, so we are…delayed a lot of the times. We have a caterpillar tunnel so we do have a covered space that gets a good sun and gets hot, but we can't start stuff like peppers and tomatoes in March…" (Achilles, Interview)
- "…the biggest challenge is…both cold storage and freezer storage…we don't have the infrastructure…to keep things that are perishable from…going bad." (Marigold, Interview)
- "We've five different places [for processing]…about 100 miles away one way…go back and pick up the beef…with 400 miles of transportation to get the animal from the pasture to the freezer." (Keri, Interview)
- "When I started…everybody was saying, regenerative agriculture can make a living…The proof is showing that you cannot make a living doing agriculture in general, but especially regenerative agriculture." (Felicity, Interview)
- "It is sometimes hard to be there and hear people like griping over pricing. While, I also am like, not really paying myself a living wage yet." (Freya, Interview)
- "You know, no one's getting rich farming." (Bellamy, Interview)
- "What one I do think this is a hard place for people to make money from agriculture, because it's not suited for big industrial stuff." (Roy, Interview)

Material Facilitator

Physical resources, environmental conditions, financial supports, or infrastructure assets that enable regenerative farming. Includes fertile soil, tool access, land access, supportive neighbors, secondary income, etc.

Illustrative Quotes:

- "We're in a really privileged position to have access to this big property with a lot of fairly decent convertible farmland. We decided why not give it at least a little try... We feel really lucky that that is the reality for us." (Achilles, Interview)
- "...we were able to borrow a tractor to move the chipper around the field...And it was a lot of work. But we got we got some help." (Doug, Interview)
- "Our compost [is] from a farm down the road...all the woodchips we get for free from arborists...there's this program called chip drop." (Otto, Interview)
- "The last two years we've been really lucky a CSA member donated enough money for us to hire someone two days a week for the season." (Annabel, Interview).
- "People don't have space, enough time, they don't have a yard to have a compost bin. They don't want to keep a worm bin under their sink or in their basement. So we just started asking people, if they were interested, we went to a CSA for where we're trying to sell eggs and lamb. And we put up a sign for compost collection service, and we got a couple customers." (Cameron, Interview)

Competencies Barrier

Lack of knowledge, training, or adaptive experience that hinders regenerative practice. Includes mistakes, absence of mentorship, ecological misunderstandings, or overwhelm from complexity.

Illustrative Quotes:

- "But we're still very much learning. We're first-generation farmers and work out it's all kind of trial and error." (Wren, Interview)
- "...I made a lot of mistakes back then that that I look back now and laugh, but I think it was necessary to learn all those things back then...and now it makes it a lot easier now." (Bellamy, Interview)
- "...In the beginning, I would try to adjust my paddock sizes...without any regard of you know, how's the soil looking? So I would leave the cows there until the grass

was down. And…now those cows are going back and taking that dreaded second bite of that plant that's trying to regrow." (Bellamy, Interview)

Competencies Facilitator

Knowledge, "know-how," learned skill, community mentorship, or experimentation that supports regenerative farming. Includes trial-and-error learning, systems thinking, and adaptive technical skill.

Illustrative Quotes:

- "Every year, you know, it's a slow, long journey…we get closer to the goal of being…fully financially viable." (Cameron, Interview)
- "We just took a washing machine, retrofitted a basket, and then we can spin our salad mix…those are the kinds of simple tools…against economic pressures." (Louis, Interview)
- "We just have a really nice network of farms, friends with a lot of experience…We do the winter cooperative CSA…we work with three other farms." (Annabel, Interview)
- "I bet I spend…30% of my time farming doing mechanical work. So whether that's tearing apart a tractor, tearing apart a trailer…You got to be a jack of all trades." (Julian, Interview)

Embodiment Barrier

Physical, embodied, or somatic limitations—human or more-than-human—that obstruct regenerative farming. Includes burnout, injury, chronic pain, physical depletion, or health challenges in key multispecies systems.

Illustrative Quotes:

- "It's a physical job. So you need to be on top of your physical health." (Achilles, Interview)
- "It's like a lot of folks have this…almost fantasy about working on land and being with the land, but the reality is, it's really [expletive] hard work." (Maya, Interview)
- "…selling vegetables alone, is not doing it…what I can do physically, myself, I can't push…even if I…want to, I just physically can't." (Ella, Interview)

Embodiment Facilitator

Bodily vitality—human or more-than-human—that supports regenerative practice. Includes strength, stamina, emotional resilience, thriving animals, healthy soil biota, or other energetic assets.

Illustrative Quotes:

- "…it's like having a really good workout." (Achilles, Interview)
- "I love the physical work of it." (Freya, Interview)
- "It was just my dream to be on a farm…the rhythm and the seasons…that keeps you healthy being a farmer." (Iris, Interview)

Social Network Codebook

Development of Social Network Codebook: Inductive Approach

This social network codebook was developed inductively from qualitative interview data collected from participants in a study on regenerative agriculture. Rather than beginning with pre-established categories, I allowed patterns, themes, and distinctions to emerge from the participants' own language and descriptions of their lived experiences. The process unfolded in several iterative stages, guided by principles of grounded theory and reflexive thematic analysis.

Initially, I coded interview transcripts line by line, identifying any references to relationships, interactions, or forms of exchange that shaped farming practices. These codes were not limited to human actors, but included non-human life forms, digital tools, weather systems, and institutions. I paid close attention to how farmers narrated their social worlds, who or what was involved, and how these connections influenced daily decision-making, problem-solving, knowledge-sharing, and broader farming outcomes.

As coding progressed, clusters of similar codes began to take shape around different types of relational networks. For instance, several farmers spoke about their interactions with soil microbes, animals, and pollinators in ways that reflected a deep interdependence with nonhuman life forms. This led to the creation of the "Beyond

Human Networks" category. Similarly, recurrent references to cooperative labor arrangements, CSA partnerships, online forums, and family support began to coalesce into separate but overlapping thematic categories, such as "Farmer Labor Networks," "Digital and Social Media Networks," and "Family and Friend Networks."

Throughout this process, I continually revisited earlier transcripts to test emerging categories against new data, refining definitions and collapsing or expanding codes as necessary. Illustrative quotes were selected to ground each category in the participants' own voices and to ensure conceptual clarity. Where relationships spanned multiple categories—such as family members also being farm laborers—I coded for both network types but noted the contextual distinctions.

By prioritizing grounded insights from farmers' narratives, this inductive approach ensured that the codebook reflects the complex, multifaceted, and often entangled nature of social relations within regenerative agriculture. Rather than imposing a rigid typology, the final codebook offers a flexible, empirically grounded framework for analyzing the diverse networks that shape ecological farming practice.

Beyond Human Networks

Relationships with non-human life forms (crops, animals, pollinators, microbes, pests, wildlife) that shape farming practices.

Illustrative Quotes:

- "It's inspired me to try to create more environments like this, where it's like super rare, where we can all sort of grow. Things are very helpful and the sheep and the goats and the cows are all playing a role." (Nathaniel, Interview)
- "I had never worked on a farm that had animals…[I] started to realize that animals are intricately linked…to have a really complete regenerative system, you really need animals." (Heather, Interview)

Climate and Weather Networks

Interactions with climate variability, weather patterns, seasonal shifts, and climate adaptation strategies.

Illustrative Quotes:

- "…we just had a big drought year, and the year before we had a big flood year…unpredictability…we needed to be resilient to both." (Judy, Interview)
- "You have to recognize that the climate is changing, and that you have to adapt to that." (Achilles, Interview)
- "You make decisions based off of past patterns and the patterns don't hold true anymore. So how do you make planting decisions when out of the blue you can take a hard freeze a month after your last frost date?" (Carter, Interview)

Customer and Market Networks

Relationships involving the buying, selling, or distribution of farm products. Includes farmers markets, CSAs, direct sales, cooperatives.

Illustrative Quotes:

- "These eggs are really expensive, or that those greens are really expensive. And then when you think about it, it's really challenging for farmers to pay themselves a fair wage to do work." (Alice, Interview)
- "Cashflow is the number one problem that any business runs up against. And farmers, particularly in New England, run into the fact that we have really long, hard winters. And during those months, you're not going to have great cash." (Louis, Interview)
- "And, you know, but we need support, like, this is the reality of the financial situation here. And, you know, and we just sort of slowly chipped away at, like, getting people to both invest, but also like, become customers and become involved. And I kept my job for the first two years." (Heather, Interview)

Digital and Social Media Networks (Sociotechnical Relations)

Use of digital platforms or technologies to communicate, market, organize, or share knowledge.

Illustrative Quotes:

- "One, one guy who we follow there's a lot of people within our extended community on YouTube." (Alice, Interview).
- So we're in areas, different areas of the country, where they do rotational grazing, like—like I was talking about Greg Judy. He's on YouTube. Since he's down in Missouri, he can put cows out all the time." (Brady, Interview)
- "…but I've found a lot of talks on YouTube." (Cameron, Interview).
- "You know, we've been in a whole bunch of documentaries and youtube videos and stuff, and we get a lot of emails like we want to farm." (Flynn, Interview)

Family and Friend Networks

Kinship, household, or close personal relationships influencing farm operation, labor, or knowledge transfer.

Illustrative Quotes:

- "My dad bought the land back in the 60s…and I owe nothing on the land, and my husband has a good job. Those are the only two reasons I can do this." (Felicity, Interview)
- "And which led us when we considered our unfair advantages…my parents had land…and it was marginal land, but it was a place to go and we had a little cabin there and we can move our young family into the little cabin off grid and, you know, basically bootstrap a farm business." (Cameron, Interview)
- "We are, like, beyond lucky…my parents didn't buy our farm…but they've given us loans a few times when we weren't able to get financing elsewhere." (Tessa, Interview)

Farmer Peer and Labor Networks

Knowledge-sharing, solidarity, and mutual aid relationships among farmers within and outside formal labor structures.

Illustrative Quotes:

- "We just have a really nice network of farms, friends with a lot of experience…We do the winter cooperative CSA…we work with three other farms." (Annabel, Interview)

- "Yeah, I have a great crew. So they're just like, they're solid workers, they can get it done. We have efficiency we made make sure that everybody's kind of like, just like, turning a bed over quick enough that we can make another crop in that bed soon." (Otto, Interview)
- "I was working at a Camp Hill Farm and I met her [Alice] and she was telling me how she milks cows and I was like, wow, that's really cool."(Cameron, Interview)
- "I wanted to do, wanted to get more farming experience. So I apprenticed at [local farm] for a season, which is really powerful…I wanted to be a places that had education as a mission, because I knew that's like, kind of where I was heading…" (Cassie, Interview).

Institutional Networks

Relationships or discursive engagement with institutions and organizations including private companies, government agencies, universities, NGOs, extension services, certification bodies, etc.

Illustrative Quotes:

- "If you're familiar with the Food Safety Modernization Act…farms of a certain scale, based on income, generally have to comply with those parent food safety regulations…But along with that came this rule that you're not allowed to use strap apples for site or production." (Violet, Interview)
- Like now you have all these companies, like General Mills, saying, oh, we're regenerative. And you actually have Bayer, who bought out Monsanto, saying, we're regenerative, and they're the company that makes Roundup. So, you know, it's just become almost meaningless."

Local Community Networks

Connections to neighbors, local businesses, civic institutions, community groups shaping farm experiences.
Illustrative Quotes:

- "…we make an effort to try to make connections. We also have been introduced [to] some farms through the [New England area] food hub…" (Achilles, Interview)
- "Our neighbor lets us borrow equipment when ours breaks down." (Doug, Interview)

- "You could borrow the forestry mulcher? I said I'll raise you a bacon. I'll raise you a pig or two. So we might barter that…" (Bellamy, Interview)
- "If there's a tool that we didn't have yet he would let us borrow it and vice versa. We have really similar so he also had chickens in a mobile coop with a very similar design." (Wren, Interview).
- "The last two years we've been really lucky a CSA member donated enough money for us to hire someone two days a week for the season." (Annabel, Interview)
- "People don't have space, enough time, they don't have a yard to have a compost bin. They don't want to keep a worm bin under their sink or in their basement. So we just started asking people, if they were interested, we went to a CSA for where we're trying to sell eggs and lamb. And we put up a sign for compost collection service, and we got a couple customers." (Cameron, Interview)