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Mind, Body, and Farmland: The Agricultural Revolution of Regenerative Agriculture and the Social Construction of Sustainability.

by

Amanda Pennett

A Thesis Submitted to the Honor Council

For Honors in Anthropology

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Acknowledgements

For Monique, Leah and every woman dedicated to conserving the natural world.

Thank you to my inspiring advisors, Professor Searles and Professor Tran, who have guided me in creating this thesis and finding my passion for anthropological study.

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Abstract

An agricultural revolution has begun to take place in light of the growing awareness of environmental issues that impact crop production on farms. In the beginning of the fall of 2022, I began to study the culture of regenerative agriculture in rural Pennsylvania using anthropological methods, including participant-observation and semi-structured interviews, working alongside local farmers. I was also interested in uncovering the flaws in our current industrial agricultural system and how farming could be reimagined to benefit farmers' mental health, soils, and ecosystems while privileging the voices of those farmers committed to regenerative farming. The ongoing evolution of regenerative farming is made possible through the recognition of female voices in having a say in making decisions and managing a farm, all of which contribute to the sustainability of their practices. A longtime dominance of industrial agriculture that privileges male voices and that relies on pesticides, genetically modified seeds, and monocropping has damaged the health of natural environments and the mental health of farmers. A new way of agricultural production is emerging, one that embraces practices that provide meaningful labor and psychological fulfillment. Through a personal, spiritual, and intentional relationship with one's farm lands, a regenerative-oriented farmer is able to replenish and heal soils. A culture of communal knowledge-sharing is taking place from farmer to farmer, uniquely shaping regenerative farming itself. This culture is born in the way regenerative farmers are connecting with their lands to care for the soils, and generate produce that is grown ethically. My thesis contributes to a small but growing body of literature on the anthropology of alternative agriculture in the United States and beyond.

Introduction

The Value of Regeneration

> On a cool autumn day, I was carefully harvesting beets, trying to pick the perfect size Monique wanted to make bunches. I pulled out medium sized purplish beets one by one, some with little effort as some rested just above the surface of the soil, with a couple roots holding on. As I finished harvesting a few bunches, she held up one of them and asked me, "How much would you pay for this?" Having no relative idea of vegetable prices and knowing how much organic produce costs in the grocery store, I shot high with an answer of $15, then backtracked a bit, saying "at least $7 or $8". She looked at me with a slight frown and said she wished people would value her produce that high stating, "You see what goes into it, you see what I do." Monique went on to tell me how she may start selling some of her produce in the natural market she works at as she told me how one of the customers recently showed a great interest in buying Monique's beets if she were to sell them there. (Pennett fieldnotes, 10/13/2023).

Monique further explained, people would not pay more than 3-4 dollars for a bundle of her beets. Not only knowing the labor that went into production of these beets, but also the sight of how big they were and how many Monique put into a bundle, I was shocked. Unlike mainstream 'organic' produce, regenerative produce costs less compared to the rising prices of certified organic products at your grocery store. 'Organic produce' is defined as "of, relating to, yielding, or involving the use of food produced with the use of feed or fertilizer of plant or animal origin without employment of chemically formulated fertilizers, growth stimulants, antibiotics, or pesticides" (Merriam-Webster Dictionary). Regenerative produce is more than organic and more

than a culmination of sustainable practices. It is the produce that is created with the pursuit of restoring the microbiome of the soils and working to enrich the life of the land.

In this mode of food production, mind, body and land are interconnected, with the physical labor of farmwork contributing positively to the mental state of farmers and to the health of the soil they cultivate crops on. Both commercial and regenerative farming depend on physical labor, but regenerative agriculture is dependent on the intricacies of farmer-land interactions. Basic principles of regenerative agriculture include no tilling and no use of pesticides. It also involves the use of natural fertilizers, with the net result of these practices creating a more intimate relationship between the farmer and the land. With the ever present threat of environmental problems caused by industrialized agriculture increasing in degree and scale, regenerative agriculture is a growing avenue for a way of producing food that responds to these problems while improving the mental health of farmers and expanding community access to nutrition.

Research Questions

While painting a holistic picture of the agricultural world in rural Central, Pennsylvania, this thesis will answer the following questions: How does regenerative agriculture impact environmental and mental health? How does it empower farmers within the community, particular women farmers?

Literature Review

With respect to the field of cultural anthropology, the culture of farming and farmwork among different peoples has been thoroughly studied; however, studies have seldom been conducted on the culture and practice of regenerative agriculture. One anthropologist defines farming as:

> "a co-dependent process that involves humans, plants, soils, and animals. It drives and complements systems of exchange, whether through market exchange at farmers markets, large-scale commodity sales and barter, or reciprocal gift exchange between neighbors and within communities" (Ofestage, 2023).

This holistic perspective lends itself to the openness that anthropologists operate when analyzing culture in general and farming practices and their impact on communities in particular. When analyzing farming through an anthropological lens, questions of why and how agriculture became so intertwined with interactions with market and state, are a key point of interest. Renowned anthropologist, Clifford Geertz, coined the term 'agricultural involution' to describe the intensification of farming practices in Indonesia in the 20th century (Ofstehage, 2023). In general, however, an anthropological study of farming involves the ways in which society, culture, tradition and innovation intersect.

Patterns of human activity and farming have continuously been evolving, with breakthroughs and societal events shifting how humans think and act.

> "During the 1980s US farm crisis, in which falling commodity prices and farm debt led to widespread farm foreclosures, neighbors blamed each other for falling into debt and losing their farms. Elsewhere during the same crisis, farmers often eschewed 'traditional' values of farming, such as land stewardship, deeply-held religious beliefs, and family-centered decision making, in favor of individualism and profit making" (Dudley, Barlett cited in Ofstehage, 2023).

Crises such as these turned the tide of how farmers viewed themselves and consequently in this case, understanding of the land and the culture of farming around them. While a single historical event cannot explain entirely commercial agriculture's rise to dominance, recognizing these

types of cultural and societal shifts is essential to understanding how the food production systems we see today emerged. Regenerative agriculture is one of the emerging systems of farming that offers an opportunity to redefine relationships with the land. There are other systems, too, that offer an alternative to agribusiness, and these include organic farming and the use of origin labels that are designed to create a connection between producer and consumer. While organic farming and origin labels for certain goods have become prominent however, they are not fully distinguishable from commercial or industrialized agriculture in the way that regenerative agriculture is (Ofstehage, 2023).

> "Seeking to understand how humans and non-humans act collectively may entail studying the lifecycle of farm animals that coexist with human populations, or studying the interaction of fungi and plants that make crops grow well. This focus on change, emergence, and multispecies agency has inspired anthropologists to consider plants and animals as agents within production systems rather than as resources. They are changed by human action, but also change human action and thought" (Ofstehage, 2023).

This quote is precisely what my experiences with farmers practicing regenerative agriculture enabled me to understand. The ways regenerative farmers interact with and shape the land forms the basis of an intimate relationship informed by a set of values and beliefs that promote a sense of sustainability, renewal, health, and healing. Such an approach to agriculture is particularly important now that we are living in an age of the 'Anthropocene', or a geological era defined by humanity's ability to permanently affect all the world's natural cycles and patterns. Farming occupies an interesting space in the Anthropocene in particular, as the impact of farming on the natural environment varies greatly, ranging from practices that do much damage to the land and its inhabitants to those designed to reverse that damage. What is true about all farmers, however,

is that “everywhere, they leave the land and themselves changed” (Mathews cited in Ofstehage, 2023).

Methods

In the Fall Semester of 2022, I took *Anthropology 201: Field Research in Local Community*, which allowed me to conduct participant-observation, a key research tool of all cultural anthropologists. I chose to work on two local regenerative farms as part of my research project, experiencing the day to day harvesting patterns and the values and beliefs informing their approach to agriculture. The two farmers I worked with and learned from were two women who became like an adopted family to me. Through working alongside them, primarily in the late summer to mid fall, and in sharing many conversations with them, I learned how regenerative farming practices create a strong connection to the land that is a source of mental health and wellness.

Prior to conducting research I completed the CITI Program for ethical research with human subjects and received Bucknell University’s IRB approval for this project in the fall of 2022. I renewed this approval with Bucknell University’s IRB chair to continue this research for the thesis on September 13, 2023.

As a student Anthropology 201, I recorded dozens pages of field notes that included summaries and observations of informal interviews. At the end of the semester, I conducted two formal interviews, one with each of the farmers I worked alongside. In these interviews, I inquired about how being a farmer has impacted their mental health and why. I also became a research subject as I was able to reflect on how participating in regenerative farming impacted my mental health. This reflexive approach added more depth to my study. Drawing on data generated through these methods, I was able to analyze the impact of regenerative farming

practices on the land as well as how the role of 'regenerative farmer' impacts a farmer's sense of well being and relatedness to their community.

Field Sites

Through the course of this research, I conducted participant-observation on two field sites, including a local farm just outside Lewisburg, owned by an older man named Joe, and a smaller-scale personal farm owned by Monique and her husband, located near New Berlin. Joe's farm is a small, privately owned farm, a little larger than 5 acres in size, run primarily by a hired farm manager, Leah. The farm contains several beds of crops lined up in rows, including a variety of flowers, herbs, and vegetables, seen as 'Main Crop Rows' in ***Figure 1***. To the right of these beds is a greenhouse, fairly new in use, along with a shed that stores essential farming equipment. To the left of the beds is a walk-in "cooler" that is used to store all fresh produce that is harvested. Right outside of the wooden cooler is a processing station- a sink area cut into the land with bricks, with a hose strung through the metal structure that borders the square station. A table is conveniently placed right against the sink. This station is often used by the farmers (including myself) to wash and process our harvested produce. Alongside this general area that borders the left side of the crop beds, there are several ducks and chickens that Joe keeps as pets, fenced in a small area next to a few trees. They are in perfect view of the processing station, often playing or drinking out of a kiddie pool in their pen. Behind the garden beds is a long composting pile Leah and I occasionally would visit to dump the old produce or weeds onto. Along the very back of the property, two cows- Brownie and Christmas - graze a small field that stretches around the far backyard and to the right, just next to the shed with the farming equipment. Farther to the right, dividing the front from the back of Joe's yard, is a barn that hosts the cows and their food.

Another section of the property used for crop production is a big field on the left side of the property, labeled the 'Roadside Crop Field' in ***Figure 1***. A road runs adjacent to the perimeter of the field, allowing for the sights and noises of local trucks and traffic. Half of the field has a similar set up to the center portion of the backyard- neatly lined rows of crops. The other half of the field is sparsely used. I have only visited this half of the field to harvest a small section of corn on one of my workdays. There are rows of crops, however, and one bigger section where crops were more closely packed together. Different vegetables were intercropped in this section of the farm.

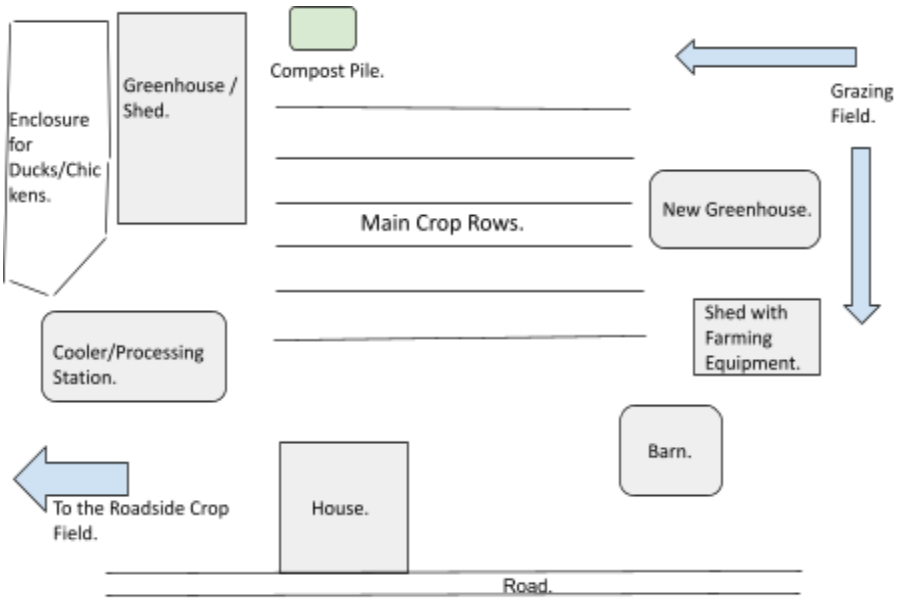

Figure 1. Basic Diagram of Joe's Farm

The second farm where I conducted my research is owned and run by Monique, a middle-aged woman who has been selling her produce at local farmers markets for at least a decade or more. She and her husband own the property, a few acres of land. A road borders their house, with the main greenhouse on the other side of it. Inside the greenhouse, shown in ***Figure***

2, herbs, fruits and greens are all grown together. Around the edges of one side of the greenhouse are small plots of grape vines that Monique's husband has made. There is a big sprawling collection of raspberry bushes near the entrance to the greenhouse, then more to the right are a few rows of crops. Monique's property is situated on a slope and at the bottom of the hill, behind the rows of crops, are two ponds- one dug by Monique and her husband and one naturally formed, filled with algae. Uphill from the rows of crops is a barn, which acts as a shelter for Monique's cow Diamond and her calf, George. The barn used to be filled mostly with farming equipment that is now moved to the outside of the barn since Monique has purchased her cow. The barn also includes a sink attached to the outside, with a water pump located right next to the side of the barn. The once unused field on the far right of ***Figure 2*** has now become a pasture for the cows, like Monique had previously idealized, reflected in ***Figure 3***. Since last fall, Monique has also purchased two pigs - Rosebud and Juniper, which now reside in a pasture recently sectioned off for them bordering the neighbor's property.

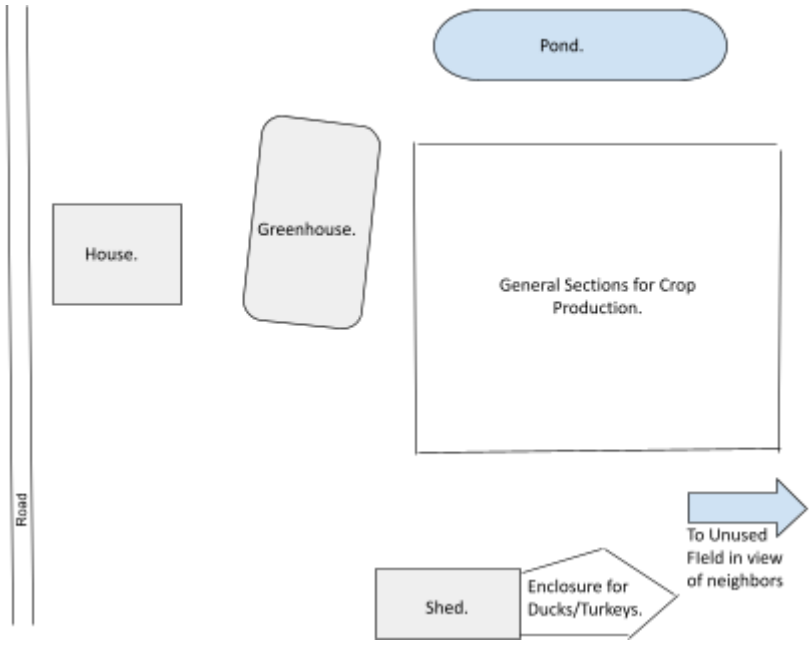

Figure 2. Basic Diagram of Monique's Farm; Fall 2022

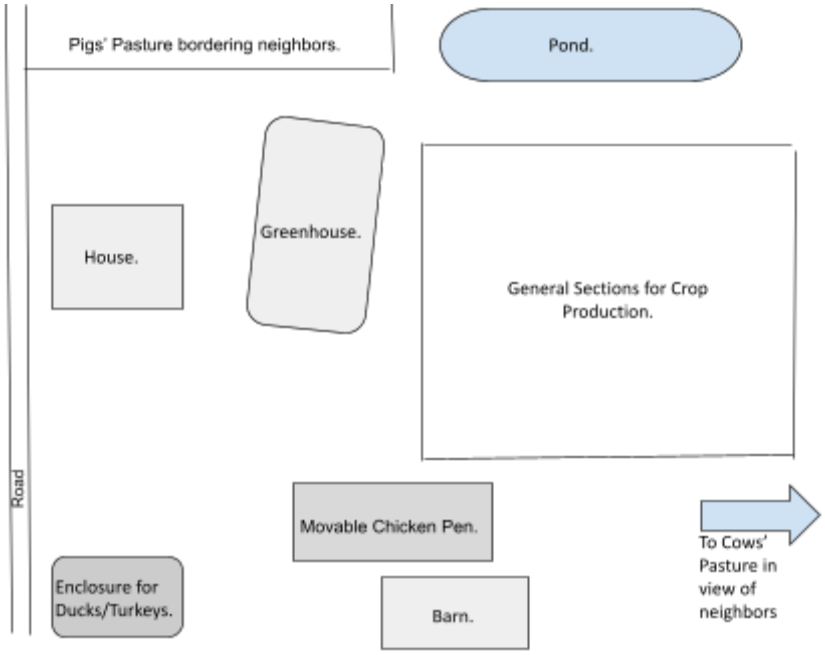

Figure 3. Basic Diagram of Monique's Farm; Fall 2023

Overview of Terminology

Because farming encompasses a wide range of diverse practices which themselves are defined by many different terms, I will provide a short glossary to help my reader understand the similarities and differences of different approaches of agriculture.

Sustainability

The overarching ideology of working toward helping the world's natural environments become healthier and capable of lasting a long time if not forever. In the thesis, I use itto describe the ways farmers are shaping their practices with the goals of long term viability of the soil, land, and environment in mind. Sustainable farming is holistic in that it encompasses all the different ways in which a farmer interacts with the land, with other farmers, and with consumers.

Conventional Farming or Agriculture

Commercial Agriculture

Industrial Agriculture

Productivist Model

These terms refer to the most common mode of farming in the United States that is responsible for most of our produce. It is a system designed to generate yields large enough to turn a profit. Some argue that it is the only system that can produce enough food for every resident of the United States. However, many experts in agriculture now believe that it is a model which causes too much harm to the environment and is unsustainable and they point to the ways in which this system degrades lands, pollutes the environment even ase production capacity as well as nutritional value of the food produced declines.

Sustainable Farming or Agriculture

The term "sustainable agriculture" (U.S. Code Title 7, Section 3103) means an integrated system of plant and animal production practices having a site-specific application that will over the long-term:

- Satisfy human food and fiber needs.
- Enhance environmental quality and the natural resource base upon which the agriculture economy depends.
- Make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls.
- Sustain the economic viability of farm operations.
- Enhance the quality of life for farmers and society as a whole.

(from USDA National Agricultural Library)

Regenerative Farming or Agriculture

A step beyond sustainable farming, constantly evolving, an agricultural revolution. Key practices include little to no tilling and use of natural fertilizers and pesticides. Ideally regenerative farms form closed, self-sustaining systems in which every natural resource of the farm is used to cultivate crops with minimal reliance on additional resources such as fertilizers, pesticides, and herbicides.. “Regenerative means actively trying to give the soil life, active in making things alive…” (Interview with Monique), and it is this living quality that keeps the soil healthy, and the crops weed free and resistant to predation by bugs and other critters.

Regeneration

A renewal and rebirth. A restoring force to propel a healthy environment and create new life in ecosystems.

Organic

Government Certified Organic

Appropriated by mainstream, industrialized agriculture, and proclaimed as a sustainable revolution, it is a trend in our modern food culture that is presented to consumers as superior to non-organic based agriculture.

Certified Naturally Grown

An independent certification process, of which Monique subscribes to, that regards regenerative agriculture as the most sustainable form of organic production. A coalition of local farmers conduct the certification by visiting each other’s farms and confirming that a common standard is being maintained.

I. Why Regenerative Agriculture?

The Tragedy of Industrialized Agriculture

Today's farmers are facing more challenges than ever in meeting adequate production due to extreme climate events that are becoming more frequent, which have been causing steady and long term ecological damages. This is not the only root of the widespread environmental degradation that has plagued ecosystems across the county. The conventional farming practices our food systems depend on are based on the principle of growing massive amounts of one crop, which has a steady capital value–monocropping. This system of production heavily relies on machines to till, or turn over, the soil and harvest crops. Monoculture is industrial farming's simple approach to maximizing crop yield and farm profits. However, this mode of farming ultimately leads to less productive soils and comes with a high risk of crop failure. Land degradation occurs as these soils are eroded and depleted of natural microbes from overuse. "Soils under such intense cultivation have become so degraded, says soil scientist Asmeret Asefew Berhe, that they can cause a chain reaction of water pollution that extends well beyond the farm" (Carlisle, 2022). This pollution, in the form of runoff, spreads harmful chemicals used on industrial farms into bordering lands and waterways. One of my research informants, Monique, has experienced the impacts of land degradation first hand due to the conventional methods used by her neighbor, bordering her farmland, stating,

> …he had an excavator come and take down all the brush and everything–he wants to make a pasture. What he did was he basically–it was a swamp, like a marsh–and what he did was just bulldozed it all. What's happening with our 8 acres is that water needs to go somewhere and what's happening is because he is making his land into pasture, my land is becoming wetter and wetter. The marsh wants to go where it wants to go…it's backing

> into our land, our middle field is completely wet…where he wants it all flat and green, well he pushed everything away and now guess what, our land is wetter and we're getting somewhat of a marsh pond area in what used to be our pastures. (M. Blais, personal communication, March 26, 2024)

Although Monique is not taking part in conventional practices, those around her are, and the negative impacts have spread into her land, disrupting the balance of nature's landscape and in this case, distribution of wetlands. This idea of plowing down anything in the way of creating 'perfect' pieces of land to be used is the hallmark of commercial farming. These methods aim to conquer over the land, rather than work with natural order.

Excessive commercial production and lack of diversity in crop cultivation not only gives way to less enriched soils, but also to a need for more pesticide use. "Since 1989, overall pesticide use has risen by about 8 percent or 60 million pounds" (Kimbrell, 2002). This cycle of increased machine and chemical use in industrial farming has contributed to a loss of half of the topsoil in the U.S. since 1960, at a rate 17 times faster than nature can recreate it (Kimbrell, 2002). And when pesticides started to become ineffective, genetically modified crops became a new reality. Leah, one of my research participants who is a local farmer, discussed with me the consequences of genetically modified produce, pertaining to corn and how the use of pesticide has impacted her personally:

> Author: …so quick question that popped into my head - obviously there's a lot of farms in the area that produce a lot of different things and I remember our conversation around pesticide use in wheat production last year that interested me…do you know the details of pesticide use in this area specifically? Like how do you see the impacts of [soil] erosion in the area?

Leah: I personally probably haven't been around long enough in one place to see the personal effects in this area of land degradation. I did study in Rodale Institute[1] where they do side by side trials of organic systems versus conventional systems…because you're building the soil systems and you're feeding the creatures in the soil that are beneficial, you have a much more adaptable product. So this year we had an over abundance of rain and I definitely see the difference - and the summer before that we had no rain, so I definitely do notice that on our farm with our regenerative system the plants have much more durability and adaptability to extreme weather conditions, whereas conventional - if it's dry they wouldn't have those root systems to tap down and get water deep in the soil or have the capacity to hold water and would stand a drought better…It's the same with excess water as well, so yes from that aspect, and then personally in terms of health - so like Dreamcatcher for example is surrounded by corn on like every angle and I - a lot of people plant what's called round-up ready corn so it contains I believe glyphosate, which is like what's pretty detrimental to health and so this corn has been bred to be able to withstand the roundup being sprayed so it doesn't kill the corn but it kills weeds, pests, whatever.

Author: Wow so the corn is already filled with its own chemical makeup before being sprayed?

Leah: Yea so its sprayed but it's also genetically modified as well and so its- the detriment to health is bifold. It's been genetically modified, which we have no idea how that effects us, but it certainly does and then its sprayed with pesticides which we know are harmful to health and I experience that personally because I was diagnosed with lyme disease and

[1] Rodale Institute is a 501(c)(3) nonprofit, located in Kutztown, PA, dedicated to growing the regenerative organic agriculture movement through rigorous research, farmer training, and education.

every summer, like, I just struggle and I have such terrible flare-ups because they come with a helicopter and they spray and when they harvest the corn, it's creating all of this dust and off gassing from all the pesticides and stuff and it just affects my health.

Author: That's incredible that it's gotten to a point where it's filled that much with chemicals.

Leah: Yea and the other part of it is that these are what are called forever chemicals because they are compounds that do not break down and disappear from the environments so they are spraying every year every season and they're leaching into the ground, leaching into our water…a filtering system is generally not going to be able to filter that out so our exposure beyond just the spraying, its inescapable and I think there's a stat that 98% of organic produce in america still have traces of glyphosate in it.

Author: It's crazy to think of how much is sitting in the soil, and our air.

Leah: Right it's just lingering. (L. Bingaman, personal communication, November 7, 2023)

This firsthand account is one of many stories surrounding the negative impacts of pesticides on our health. Not only does Leah's personal experience reveal the harm of being directly exposed to pesticides, but also the ways pesticides linger in the air, potentially impacting those living in areas of high farming activity. "A National Cancer Institute study found that farmers who used industrial herbicides were six times more likely than non-farmers to develop non-Hodgkin's lymphoma, a type of cancer" (Kimbrell, 2002). Exposure to these chemicals is not only generating long term health problems for humans, but damage to the ecosystems within and adjacent to farmlands as well. As Leah stated, we ourselves are continuously coming into contact with produce that is not regulated enough and is most likely a contributing factor to many

different kinds of diseases. Consequently, because of our society's over reliance on industrialized agriculture, we are at risk for the development of food borne illness and long term health issues, such as cancer.

Leah also mentions the potential dangers of genetically modified food in the interview. There are many risks associated with consuming genetically modified food, including exposure to toxins, allergic reactions, antibiotic resistance and loss of nutrition. The widespread use of genetic modification in our food can have severe impacts on the ability of humans to fight disease and infection, particularly bacterial infections. Genetically modified seeds rely on bacteria to carry the modified genes into the cells of a seed, and some believe that our exposure to these bacteria is causing them to become resistant to antibiotics. "...In creating genetically modified (GM) seeds and plants, antibiotic resistance genes are commonly used as marker genes for the selection of transformed plant cells. In parallel, concern has been addressed about whether horizontal gene transfer (HGT) of these genes from the plant material to environmental microorganisms can take place, thereby – in the next step – compromising the therapeutic value of antibiotics in human and veterinary medicine." (Midtvedt, 2014). This new reality is taking place without regulation and adequate research to understand the long term impact of consuming genetically modified foods. The 'need' for genetic engineering points to major fault lines in the conventional farming system, one that will become increasingly dependent on gene technology to offset future declines in productivity. For the regenerative farmer, by contrast, the goal of healthier and more nutritious produce lies in the health of the land it is cultivated on and not in the laboratories where scientists work to alter the genome of seeds used to produce food.

Having celiac disease myself, I have wondered about the intricacies of food production, specifically commercially produced wheat. Leah and I discussed this commercial production in

the first year of my research. This began my interest specifically in how pesticides have impacted our agriculture and the nutritional value in our food. This is how I first heard the word *glyphosate*, a particular pesticide that has been used in mass wheat production. Leah informed me on the harms of this chemical and how at the time, in late 2022, debate was taking place on whether the pesticide would be banned by the European Union. Unfortunately, the Commission has allowed 10 more years of its use. Leah and I spoke of how due to increased pesticide use, nutritional value in the wheat grain has declined in our modern industrialized system, and how rates of celiac disease have increased over time. This begs the question, has there been simply more of an awareness around the natural genetic disease or has it become a modern health issue caused by the manner in which grain containing gluten, particularly wheat, is grown and processed? Awareness of how our food impacts us is increasing because of the many intolerances, autoimmune issues and diseases people are increasingly facing. People are beginning to recognize the significance in how their food is being produced and processed. Regenerative agriculture is the solution many people are seeking to the plethora of food intolerances and immune system disorders. I asked Leah how she has seen this awareness evolve in recent years:

> Author: …do you think there is an increasing awareness of what goes into food production like our modern system and thus an increasing demand for organic or regenerative produce…do you feel like people are more interested in what goes into food production in recent years?
>
> Leah: Yea definitely I think there's definitely an increasing awareness of where food comes from and what's used to grow it and I think you can see that in the…even just in the surge from farm to table, where even some chain restaurants have a list of farms they

> source from, and then even just with a lot more awareness around health and how these chemicals are affecting us. I definitely think there's an awareness especially with younger generations. I think there still is a disconnect between knowing what's a better product and healthier product and what people are willing to pay to commit to those healthier products because, you know, it's more expensive to eat organic or regenerative because it requires more labor and you're using more natural expensive inputs than you are in conventional farming as well and you know, people wanna be healthy but they also don't want to spend a certain amount of dollars on food. (L. Bingaman, personal communication, November 7, 2023)

As Leah stated, people are willing to endorse organic produce, of which regenerative agriculture is the highest level, to the benefit of their health and the environment even if it costs more. Regenerative agriculture not only being beneficial to the environment, but also the environment, aids in the incentive for people to spend the extra expense and feel they are making a distinct impact. At the same time, there must be accessible sources to purchase regenerative produce, with communal awareness of the health benefits.

Regenerating Lands

In regenerative farming, natural alternatives are used to cultivate crops in place of chemical pesticides; the farmers I have worked with rarely have a need for any kind of pesticide. Their ability to avoid pesticide use can be attributed partly to one of the key practices of regenerative agriculture–intercropping. Intercropping is the opposite of monoculture; it is purposeful cultivation of diverse crops or plants in alternating rows or sections. This added diversity relies on nature to manage pest loads, such as plants that trap pests (Tucker, 2002). Crops and soils that are free of pesticides are healthier and thus more resilient to climate shifts

that impact crop growth. Early after beginning my research in the fall season of 2022, I noticed the unique, rich quality of the soil on Monique's farm:

> The dirt was muddy, and almost clay-like with a unique softness. When I made a comment about this quality to Monique, she responded that this quality was because of the health of the soil which she has carefully looked after, rich with life and biodiversity (Pennett fieldnotes, 09/20/2022).

The high quality of the soil is also the result of another main principle of regenerative agriculture that Monique upholds–limit tilling or avoid it altogether. The process of tilling involves turning over the soil or loosening it, in preparation for planting. While preparation for sowing crops is necessary, this mode of turning over the soil destroys the natural microbiome and structure of the soil, causing erosion and decreased biodiversity. Not only does tilling have severe impacts on the land, but the machinery used for tilling over many acres of farmland releases many tons of carbon dioxide, contributing to the problem of excessive amounts of greenhouse gas in the atmosphere. Limiting tilling substantially or stopping altogether improves longevity of the soil in terms of production as well as biodiversity. Monique operates her farm fully as a no-till regenerative farm. As we were preparing a section of soil with a broadfork, to cultivate garlic in the late autumn season, Monique and I discussed how this process compared to using a machine to till the soil.

> Monique explained how the basic tilling process works–plowing through the soil and going a few feet deep then tilling, which chops up everything in the already loosened dirt. Monique compared this process to mixing a cake, saying "They are mixing too much here then its dead soil", referring to the microorganisms in the soils. "What I'm doing here is way more gentle." (Pennett fieldnotes, 11/02/2023).

Monique's process for preparing the soil for cultivation is a detailed process, and varies slightly depending on the crop and its location, i.e. whether it is inside the greenhouse or outside, completely exposed. In the case of planting this garlic, the process began with removing a tarp held down with ceramic weights, which had saved a perfectly square patch of land. This unveiled section was prepped to fit about four rows of crop. This tarp technique is one that Monique learned in her experience studying at a biodynamic farm when she first began farming about 20 years ago. This is a manner of preserving farmland currently not in use and prevents the need for weeding or chemicals to eliminate weeds. Underneath the tarp was a clay-like soil, prime for cultivation. We used a broad-fork, a traditional farming tool with a metal band with six prongs sticking out of it, leaving two wooden handles for the farmer to use as leverage.

> Taking the broad-fork, Monique demonstrated how to pull up the soil. After the initial demonstration, I took on the task of making the first row, placing the broad-fork in the wet soil, standing on the metal band holding the prongs, wiggling the tool deeper into the soil using my weight then stepping off and finally pushing the tool down by the wood handles to pull up the soil. (Pennett fieldnotes, 11/02/2023)

After she broke up the initial layer of the soil, Monique took another tool, the cultivator, and evenly mixed the pulled up soil. This tool is smaller, and only used on the surface of the soil to finish preparations for sowing. The process of gently pulling up the top layer of soil preserves the soil's collection of microorganisms that keep it healthy and nutrient rich.

Another practice that increases the health of the soil, which happens toward the end of the harvesting cycle is cover cropping. The main benefits of cover cropping include "improved soil structure, increased infiltration and water-holding capacity, increased cation capacity (the ability

of the soil to act as a short-term storage bank for positively charged plant nutrients) and more efficient long-term storage of nutrients" (Sarrantonio 2007).

> I first asked about this practice when I was visiting Joe's farm towards the end of the growing season. When I asked Leah about this, she told me Joe had scattered some cover crops including rye. These crops, she explained, grow when conditions are appropriate and then stunt and pause growth when it is too cold. These provide the soil with nutrients and keep the microbiome of the soil active. (Pennett fieldnotes, 10/25/2022)

The use of these crops is calculated, with certain crops adding nutrients to the soil in a unique way. Cover crops act as "living plows to penetrate and break up compacted layers in the soil" without the heavy use of machinery (Sarrantonio, 2007). I observed this practice take place many times; one particular instance was Monique's use of Sun Hemp and Sorghum on a patch of land she will farm in future seasons.

> Monique told me how the nutrients in the roots and base of the plants would contribute to soil health. After we had cut all the cover crop down, we saved the seeds of the sorghum and began our walk around the farm… (Pennett fieldnotes, 10/26/2023)

This technique highlights the practice of adding nutrients into the soil using certain crops. Here, Sorghum is being used as a crop which produces biomass to be added to renew the soil as well as prevent disease, nematodes and other pests. "Sorghum-sudangrass hybrids can produce more organic matter per acre, and at a lower cost, than any major cover crop grown in the U.S." (Sarrantonio, 2007). This is an economically viable way to renew the soil and help prevent erosion for all kinds of farmers. Even when used on industrial farms, cover-cropping yields dramatic results in restoring the soils and helping to increase productivity.

Personal Connection to the Land

Regenerative agriculture is an observation-intensive process of interacting with the land on an individual level to enrich and protect the environment one is cultivating. The regenerative farmer interacts with their land in an intimate, almost spiritual way, taking into account all of the unique properties of their soils, landscape, climate, and animals. Leah and I discussed this philosophy of regenerative agriculture and compared it to the manner in which commercial farmers interact with the land:

> Author: Do you think regenerative farming and agriculture offers a unique sense of accomplishment and connection to the land that commercial farming doesn't have?
>
> Leah: Certainly because regenerative is not looking purely at quantity and how quantity relates to profit–in doing what you can do with as little as you could do it. So regenerative is first and foremost focused on doing what's best for everyone involved so the land, the people, the fauna, etc., so there's a much deeper value system rooted in regenerative agriculture, I would say. (L. Bingaman, personal communication, November 7, 2023)

The way regenerative farmers think of the land around them shapes how deeply they believe regenerative farming should be practiced. Viewing the natural world around them as *Mother Nature* brings about a different kind of treatment than if land is viewed as a simple commodity and a means to an end–profit and production (Gordon 2022). A regenerative farmer thinks of this land as given to them with a force of life, and this aliveness is key to the health of the soil. This notion of the soil having life is present in how the farmers I have worked with begin the process of cultivation as well as in how they prepare the land for the winter season. In my experiences of

Joe's farm, Joe often referred to the soils having properties of life and implemented the use of hay or straw to protect this life, after harvesting had ended.

> We then began spreading straw along each crop bed. Behind the processing station was a large pile of hay bales covered by a light tarp. One by one we would roll a bale of hay over to a crop bed, using a wheelbarrow [to carry] and spread a thick layer over the empty bed. This practice is commonly used on regenerative farms to offer protection from the harsh winter frost and snow, so that the soil health and any roots of crops kept in the beds can continue to live and be healthy for the next season of farming. Leah laid compost over the soil as well, then I would follow row by row with a thick layer of hay. (Pennett fieldnotes, 10/25/2022).

The microorganisms in the soil must be protected and cared for, even when nothing is being actively cultivated or harvested. In a conventional model of farming, cover crops may be used in the off season; however, following conventional wisdom, it is only one crop (monoculture) that is spread over a large area. By planting diverse cover crops, and using cover crops as the winter seasons commence, regenerative farmers keep the soil alive and active, allowing for deeper enrichment. One of the main goals of regenerative farming is preserving this health and, therefore, acting as a steward of the land.

Debunking the Productivity Myth Keeping Commercial Agriculture Popular

Despite the popular belief that commercial farms bode the most crop, productivity of regenerative farms is higher per acre than that of commercial farms because of the adaptability of the soil that comes with years of care and other strategies regenerative farmers use. The regenerative farming model is also accessible to virtually anyone who wishes to grow food due to the hands-on nature of the farming model. In an interview, Leah spoke on this topic:

> "...you can do a lot with a little and tap into local market, so I think it's a bit more accessible for people because financially if you want to do commercial farming, you need to be able to get loans–ag loans–or you need to have a lot of capital to start because at that level, you are industrial. If you start farming organically, you can grow a crazy amount of food on only a quarter-acre or if you have a backyard–people literally produce vegetables and sell to farmers markets just in their backyard. So from that aspect it's so much more accessible financially for people to get into the door and start doing it and grow it from there, whereas with commercial, it takes so much capital to get into the door." (L. Bingaman, personal communication, November 7, 2023)

Shaping what it means to farm becomes personal and individualistic, looking slightly different for every regenerative farmer. Regenerative farmers are able to create their own world on each farm by responding uniquely to what their land needs, and the resulting productivity can be extremely impressive. In fact, "the smallest farms, those of 27 acres or less, are more than ten times as productive (in terms of dollar output per acre) than large farms (6,000 acres or more), and extremely small farms (4 acres or less) can be over a hundred times as productive" (Kimbrell, 2002). The notion that monoculture and industrial grade farming is the only way to produce food on a mass scale is being deeply challenged by the manner in which regenerative farming operates. Nourishment of the land means more productive and adaptive lands.

Acknowledging that conventional farming is nonrenewable and a polluting mode of production will make regenerative farming seem more and more like the future of agriculture rather than as an alternative. Healthy soil not only increases production. It also mitigates flooding (White 2020), which is an increasingly common climate concern that is particularly important for

farmers in many parts of Union County, where this research was conducted. With the modern environmental challenges we are facing globally, the resilience that regenerative agriculture breeds offers a hope for a more environmentally conscious and sustainable food system. Regenerative agriculture offers many avenues to restore health and balance to farmland that has been degraded by commercial agriculture by growing foods that are nutritious and safe for long-term consumption. If we can reimagine our current food systems by supporting regenerative agriculture, the benefits to our health, environment and crops will be significant. Modern industrialized agriculture is stuck in a cycle of using more and more pesticides and of modifying genes that bypass government regulations in order to increase or maintain profits. Not only does regenerative agriculture address all of these issues, but it also increases access to nutritional foods, as regenerative produce is cheaper to produce and can be cultivated in one's own backyard. As mentioned previously, these gardens can be astonishingly more productive than conventional models. We must begin to source our food consciously and recognize the broken system of industrial agriculture.

II. Regenerative Farming as a Feminist Movement

Transforming Farming Spaces from Male-Dominated to Gender Egalitarian

In contemporary America, the social construction of what it means to farm and be a farmer is primarily patriarchal. A woman's role in an agricultural setting is often considered as insignificant or secondary. According to Peggy Barlett, "farm labor has become increasingly centered on men as family farms have transformed from dispersed family labor and decision-making to production dominated by single individuals" (Barlett cited in Ofstehage, 2023). In another source, Bartlett argues, "the image of farming masculinity has shifted away from productivist markers like straight crop rows, weed-free fields, and high yields, to financial markers such as profitability, total acreage, and media presence" (Bell *et al*. cited in Ofstehage, 2023). The dominance of male figureheads in commercial farming comes down to productivity and potential profit. In this hierarchical model other voices are silenced in the pursuit of as much profit as possible. Workers on commercial farms simply complete farming tasks, run machinery, and receive instructions from a dominant male figure. How the vast number of women became involved in sustainable agriculture is an important anthropological question and one that is beyond the scope of this thesis. My goal in this chapter is to show how the female, regenerative farmers that I worked with decided that regenerative agriculture affirmed their femininity.

By contrast, regenerative agriculture has attracted many female farmers because of its goals and values, thus creating an important space in which women's voices are celebrated in owning and managing farms. "Women throughout the West are up to three times more likely to be the operator of a farm in sustainable agricultural models than in productivist models" (Trauger, 2004). Whereas conventional agriculture reinforces masculinity and patriarchy, regenerative agriculture is inherently more feminine as it acknowledges diverse perspectives that

conventional farming models are simply not capable of addressing.[2] I inquired about these statistics with one of my primary research informants, Leah, asking why she believes women are more drawn to this way of farming, and she attributed it to the nurturing energy women have:

> Author: …In my background research I've found that if women farm, they are more likely to farm regeneratively, so do you feel like this mode of farming has become a means for women specifically to have a bigger voice in constructing farming?
>
> Leah: Yea I know what you mean, like commercial farming is definitely a more male-dominated thing. It's hard to say, I think part of it is that maybe women tend to…the female energy tends to be a bit more nurturing and intuitive and slower, so I think because of that energy that women just naturally have…I think we're more drawn to this regenerative agriculture because it has more of a feminine energy to it because you're nurturing and paying attention to detail and it's not just about an end goal of 'how can we be productive and produce profits'. I think it's that subconscious aspect that attracts women. (L. Bingaman, personal communication, November 7, 2023)

This natural healing energy that women often possess, aligns with the regenerative model of nourishing the land on a high level, with detailed practices performed with the goal of enriching the life of the unique soils and lands. Regenerative farming allows for careful consideration of nature's ecosystems that cannot take place without the inclusion of the feminine perspective. When I asked Monique what she thought attached women to regenerative farming models, she referenced the opportunity regenerative agriculture brings to women, stating,

[2] "US women dairy farmers, for example, have faced barriers when applying for farm credit, in everyday interactions with other (often male) farmers, and even in claiming an identity as a farmer and not as someone's wife, as a gardener, nor as a hobby farmer. They work to deconstruct the heteronormative figures of the farmer as man and farm-wife as woman in a family unit of gendered labor" (Ofstehage, 2023)

> "I think conventional farming–even just thinking about it right away–I just think of it as a traditional and male-dominated world…I don't see too much budging there and I think why women are more drawn to it is because of that–because of this renewal and inclusion, right, because renewal, regenerative means 'new' and 'maybe we can be part of it now'" (M. Blais, personal communication, March 26, 2024).

It's no surprise that women are more drawn to eco-friendly practices in general and shown more concern for the environment than men (Zhao et. al, 2021). Regenerative agriculture offers as much hope environmentally as it does in recognizing women's voices as essential to the evolution of more sustainable practices. Women's engagement in environmental wellness is shown in their preference to participate in regenerative agriculture. Regenerative agriculture specifically allows the construction of this feminist space to be formed in personal and individual ways that go beyond the label of *farmer* to the label of *regenerative farmer,* someone who is emotionally connected to their farmland and to producing products that are unique to their farm. My primary research informants have been two women, and I have seen firsthand the gender-affirming qualities of regenerative agriculture. In Leah's case, as a farm manager, other farmers value her perspective, insights, and experience. Joe, the owner of the farm, relies on Leah to take charge of running the farm and ensuring the programs they are involved in are operating smoothly and ethically. Their relationship is made possible through an approach to farming that is constantly evolving and that aims to be as ethical as possible. In working to build more sustainable practices, these farmers have open discussions about the ideal version of sustainable agriculture, and how to achieve it. In these discussions, male and female farmers exchange ideas and share practices, thus creating an opportunity for women's voices to shape how regenerative agriculture will develop moving forward.

Taming or Taking Care of Mother Nature

For many contemporary environmentalists, the Earth is often referred to as *Mother Nature*, with a feminine connotation that is significant. The idea of Earth as being our maternal caregiver has touched the hearts of many and is responsible for the passion many have toward environmental issues designed to protect and heal the natural world. However, there is another prominent image of Mother Nature that has dominated the era of modern industrialization. This image is one that paints the force of Mother Nature as something to be conquered, that is only appreciated in small fleeting moments. Mother Nature provides humanity with resources and inspiring natural phenomena, and yet she is "fickle" when her natural power negatively impacts human life. "And 'she' is apparently arbitrary, even capricious, in terms of the exercise of 'her' powers" (Jelinski, 2010). This ideology positions nature as something to be conquered or controlled by humans. Industrialized farming models exemplify this notion in their quest for optimizing yields, disregarding the costs to the quality of the soil or ecosystems that exist within and beyond the farm. Producing as much as possible for the highest potential profit often results in vast overuse of land. In commercial agriculture, nature is only good when it aligns with capital gain. When nature is imagined as a destructive force–as pests, drought, or violent storms–it must be fought with engineering and technology examples of which include fertilizers, pesticides, and genetically modified seeds. The creation of GMOs is an attempt to alter nature to produce the most 'ideal' food. In this context, connection with the natural world is suspended, as the patriarchal mode of industrialized farming seeks to tame and/or conquer Mother Nature. To regenerative farmers, however, Mother Nature is considered an ally who provides nourishment and not a foe who is a constant threat. Regenerative farmers feel like they have a responsibility to nourish nature in return. The characteristic of nourishment and care is often associated with

feminine energy. Regenerative agriculture celebrates the feminine act of nurturing, which is amplified in Mother Nature herself.

In this way, we can see how the farmer's perception of nature itself is distinguished from that of a commercial farmer. Land and soil become personified to the regenerative farmer who feels obligated to care for the health and well being of life within the soil. I asked Monique how her perception of farmland and the natural world in general has influenced how she has conducted her farm.

> Author: Do you think one's personal image of the natural world has influence over what kind of farming one engages in? How does your picture of the natural world influence your farming practices?
>
> Monique: Well yeah, it greatly influences it. I think from my own personal experience, I grew up rural and well, on a farm–my parents were not farmers but we lived on a farm–and so I think that greatly influenced me and i've always been drawn to the natural world maybe because of that and I was thrown into the natural world that way and I wasn't like a city girl. I couldn't imagine a city girl wanting to become a farmer so I was drawn to the natural way of doing things rather than the monocropping
>
> Author: From your perspective, do you see nature as a force and something to be respected in that way almost as a being?
>
> Monique: Definitely, and I think that relates to the Native American connection with the land. It's not looking at this swamp area–and the modern man would look at it as "Well what could we do with this? Could we make it a parking lot?", instead of looking at it and being like "Oh, look at all these beings that live here already, we would be taking away

from that and not seeing the magic that's right in front of you" (M. Blais, personal communication, March 26, 2024).

In commercial agriculture, a farmer views nature as either a potential adversary or as a means to an end. "The separation of nature-culture and other dualisms associated with a patriarchal worldview, its concepts of power structures, and "otherness" have been used to justify widespread destruction and exploitation of natural environments, and vast numbers of species extinctions. How to conceive of nature's agency in ways that are not anthropomorphic (or sexist) seems to be a central problem for the dismantling of discourses that define nature." (Jelinski, 2010) Industrial agriculture upholds philosophies of *other* women and the natural elements of farms. The alternative, regenerative agriculture, actively attempts to dismantle the othering by treating nature and women as key sources of wisdom and production.

The perception of the natural world as a life force to be admired and respected is reflected in the principles of local regenerative farmers, such as Monique, Leah and Joe. Understanding nature's unique ability to aid in the agricultural process and not be an obstacle or enemy is the revolutionary framework the regenerative farming model exemplifies.

Women and Regeneration

The creation of food is essential for life;, however, many people never learn how to grow food, or even witness this process. In my first months of fieldwork, I was continuously amazed by the different moments of planting, growing, and harvesting I witnessed and participated in. Working with Monique and Leah, it felt as though we became a single unit in caring for the land, a group of passionate women sharing unique but also common experiences that come with farming. Early in my fieldwork, I wrote about the first time I ate regeneratively grown figs, right off the branch:

> I often feel like I am spending a lot of mental time simply being inspired by these women and the farming experience. I admire them so much and almost feel like a child again when I get to harvest something with them for the first time or they offer me a piece of fresh produce. The fig tasted so fresh, and soft. I have never eaten one fresh so this was the first time I bit into a fig. (Pennett fieldnotes, 10/18/2022).

This moment was just one of the many times that Monique shared her farm's produce with me; she was always encouraging me to taste what her regenerative practices had created. This experience in particular has become a very fond memory for me. At the time there were only a few perfectly ripe figs, and Monique wanted to share the first edible ones with me, which I felt was a great honor. Gently evaluating the ripe figs on the branch, we searched together for the perfect plumbness and deep purple color. Pulling the fig apart, a lush mauve interior captured my attention as we split the fruit open. Monique and I each ate half of the fruit and bonded over its delicious freshness. We had previously discussed how the fig trees would not produce any edible fruit this year, and so their appearance of amazement we also shared. The inspiration I often felt while being on the farms originated in key moments and core memories like these, such as tasting fresh figs, preparing rows for sowing crops, using traditional tools, and gaining farming knowledge through spontaneous and informal conversations.

Regenerative agriculture goes beyond the physical act of farming and includes philosophical beliefs about nourishment that extends well beyond farmlands and into the hearts, minds, and communities of farmers. The imagery of Earth as a *mother* may be felt stronger by a woman engaged in farming. Regeneration is about nourishment and care, as the mission is to enrich and restore the life of the land. This becomes a personal relationship as the farmer reaps the rewards of their efforts in the quality of the food produced as well as the soils that produce it.

There is no one reason that the regenerative farming revolution has a feminist ethos, rather it is a culmination of how these farmers carry out the principles from which the farming model is built on. One explanation is the alternative nature gains credibility as it challenges the patriarchal hierarchy that structures the gender dynamics of conventional agricultural systems. Regenerative farming offers a new space for the inclusion of feminine perspectives and energy in constructing what the ideal farming model looks like.

III. Mental Health Benefits of Regenerative Agriculture

Grounded Through Farming

My dad used to say how much he loved to garden, particularly pulling out weeds, because it felt like a mental release for him, an escape from the realities of a demanding job and depression. “Every time I pull out a weed, I pluck a problem out of my life or a bad thought out of my head.” He said this to me when I was about 10 years old, and it has stuck with me ever since then. Now 10 years later, at 21 years old, I found myself living his experience almost identically on the farm:

> We cleared all 6 beds, filled with a variety of flowers including marigolds, zinnias and all manner of weeds. The difficulty in clearing each bed depended on the type of plant grown there, as the weeds and smaller flowers were harder to fully pull up from the ground compared to the zinnias which had grown to have thick stalks easily able to be grabbed and pulled up. As I pulled the weeds out from the soft soil, I felt myself getting lost in the act of clearing out the bed and seeing more and more rich soil as we went on. I remarked that Leah had a gift for pulling out the plants at just the right angle to allow the roots to come out with them. (Pennett fieldnotes, 10/24/2023)

This hands-on work is what enables regenerative farming to benefit a farmer’s mental health. Regenerative farming also empowers farmers to build a unique connection to a particular piece of land by caring for the unique ecological systems that dwell on, in, and around the land. “Some studies suggest adopting RA (regenerative agriculture) leads to changes that are consistent with improvement in hedonic well being. These typically describe RA as changing the way a farmer feels about their farm, and often also other aspects of their life” (Brown, 2023). Each day on the farm bodes new lessons, tasks and miracles. On one of my first days back in my second season

of fieldwork (fall 2023), I approached Monique's farm on a clear early autumn day. Teeming with crops and flowers, Monique had many tasks she wanted to complete, one of which was assembling a "mini-greenhouse." Besides Monique's larger greenhouse, this one is a fraction of the size, shorter in height than both of us. In the late autumn months, this movable structure serves as a small dome that can insulate crops such as lettuce, spinach, arugula, etc. The farm was abundant with blooming zinnias and rows of crops full of life. The first task me and Monique did was move her mini greenhouse made of half hops that attach to the frame of the greenhouse. We set it up together and I could tell how appreciative and excited Monique was to have it set up. She kept exclaiming "We have a greenhouse!" (Pennett fieldnotes, 09/28/2023).

Regenerative agriculture reshapes the way farmers address environmental degradation and problem-solve, which in turn provides mental health benefits. "This may contribute to positive wellbeing outcomes, for example through enabling farmers to shift to viewing environmental events such as drought as something to adapt to, rather than as something to be resisted and endured" (Sherren et al. cited in Brown, 2023). As regenerative agriculture replenishes and restores soils, both soils and farmers become more resilient and adaptable to the various threats of climate change, pests and runoff.

Mental Wellness in Regenerative Farming

Growing up, my dad regularly exposed me to nature by going on different hikes and by working together to manage the gardens around our house. But I had never worked to grow more than a blueberry or tomato plant here and there, in terms of food production. Being an outdoorsy type who always enjoyed training for a sport, I figured I would enjoy this research opportunity as it would get me outdoors performing tasks that would challenge me. It would also enable me to

explore my interest in farming and environmental sustainability (I'm also majoring in environmental studies).

I was also nervous about conducting anthropological fieldwork, too. At the time I began my research, I was at one of the lowest mental points in my life. I had become overwhelmingly depressed, facing new social challenges as I had lost a close group of friends the semester before. It was the most alone I had felt in a long time, especially at Bucknell. When I came to work on the farms during this time, there were some days I was on the verge of tears simply because of the severity of the depressive episode I found myself stuck in. I was filled with an overwhelming feeling of uncertainty and was apprehensive about how the process of anthropological research would be for me. Engaging in fieldwork, I realized that coming into regular contact with the natural world around me and with farmers who treated me as a friend, even as family, lifted me from my depression. I felt embraced by the warmth of the humid autumn mornings, clinging to the last essence of summer, the fresh air and peace that can only be attained in these quiet places in nature. The physical aspects of working on a farm offered a uniquely healing atmosphere for me, as did the smell of the grass, the wetness of the land, the richness of the soil were all too distracting for me to be anything other than content. In doing the work, I observed many times I was in a focused and peaceful state, concerned only with how I could keep my time on the farm productive as I learned the cultural details of regenerative practices. And that became the essence of doing farmwork for me, particularly the value of the hands-on nature of regenerative agriculture - feeling a sense of peaceful pride in doing the work. When I am farming, I get lost in the act of cultivating, weeding, and harvesting, lost in the feeling of working in the sunlight with the dirt under my feet and in the pride in making something happen. One particular day during my second season of working at Monique's farm captures this experience:

> The next task we did was cut down some cover crop Monique had planted to enrich a patch of soil, preparing it to be farmed on. Monique gave me a small shovel, with a sharp side, while she got a bigger knife from inside the house. Both of us went to work, slashing and cutting at the base of the tall cover crops of sorghum and sunn hemp. As I went to work, I laughed and remarked, "This is definitely good for anger management!" "Oh yeah", replied Monique.
>
> I had personally been in a frustrating situation prior to my visit to the farm that day. As I cut down the patch of cover crops, I felt my frustration melting away. I was outside breaking a sweat and focusing on my sole farming task - getting this patch of soil ready. (Pennett fieldnotes, 10/26/2023).

In these moments, life becomes reduced to a simplet a connection between farmer and the land. I was interacting with nature in an intimate way, a way like never before. I was connecting with the natural world to create something. The land was creating something in me as well, transforming my mind and soul in a mutual giving relationship. This connection flows from an intimate understanding of the land you are working on and in carrying out regenerative practices with a specific purpose. For me, regenerative practices became a gateway to a deeper commitment and understanding of the balance between the natural and human worlds and their interconnectedness.

I was always very careful to observe the intricacies of how my research informants carried out a particular regenerative practice, so that I could be as useful in helping them as possible. This provided me a new sense of purpose as I began to prove my usefulness on the farm. One of the first moments of pride and camaraderie I felt was about halfway through the autumn season of 2022, while weeding the crop rows on Joe's farm.

> Using a traditional ho, Leah instructed me to clean up the weeds in the rows. I was slowly working my way through the row, ripping out weeds smoothly with the tool, when Joe walked by with a ladder. He was going to fix something on the greenhouse. Leah stopped and asked him if he needed any help. Joe did not respond, and I went along with my work for a few seconds before I looked up and realized he was watching me. He gave me a smile and expressed his surprise with how seemingly well I was working with the ho. Both him and Leah said that I was using it better than most students and even workers that they had taught. (Pennett fieldnotes, 10/04/2022)

This was a very special moment for me as it affirmed my farming skills. The moment was rewarding not just because I was able to show my informants my dedication to farmwork, but I was also surprising myself with my physical strength. During this time, I was in the midst of dealing with a back injury that occurred while rowing on Bucknell's rowing team. While I felt my injury limited my ability to compete in my sport, I had the opposite feeling while conducting fieldwork. I was able to showcase my strength by performing farm labor. My research subjects often expressed gratitude for the work I've done and for how much I've helped them. On both Monique and Joe's farms, the operation is dependent on a few hands, and so my impact became significant in increasing their farming efficiency.

I became more and more included in the community of support I witnessed among the farmers as the autumn season of 2022, my first season of fieldwork, progressed. As I sheepishly walked up to Joe's farm on my first day of research, I saw the farmers gathered in the middle of the rows of crops talking. I was nervous and eager, ready to begin. As I walked up to greet my new informants, I could tell a very serious and emotional moment was taking place. Joe, the owner of the farm, had just disclosed some unfortunate news to the two women I would be

farming with. I was already facing an ethical question in my research, however this instance made it very clear that there was and is a great sense of support among these local farmers. Building connections with the two women I farmed with became the direct support I so desperately needed. These women opened their hearts to me, offering many discussions of spiritual perspectives and challenges of life's different relationships.

> I think my willingness and excitement around farming may've surprised my informants and there were many moments I had to prove myself in how useful I could be. Monique has told me multiple times how she really appreciates my help and today told me how her and Leah really like me. There's something special about connecting with the land with fellow women and building a connection with them through farming (Pennett fieldnotes, 10/18/2022).

We became a bonded group, of sorts, cemented by a communal deep concern and respect for the environment. I quickly felt like I could rely on them for spiritual, personal, and general advice as I continued to navigate my college life. The two of them became the big sisters I never had and a second mother to me. I felt I had a second home I could go to when I was at Bucknell. I knew every time I went to either of the farms, there was a supportive energy that greeted me. It never mattered how I felt before entering into this world of regenerative agriculture, because as soon as I was participating in the practices, I was content. I had gained a steady support system, which I desperately needed at the time, and my personal spirituality and beliefs around environmental protection were enriched through many discussions with Leah and Monique. Leah shared with me her beliefs around wellness and how our bodies interact with the environmental conditions around us. Monique taught me what it means to honor a space, a piece of land, and the

environment in general. Because of her outlook, I took every moment I interacted with farmland as a precious moment filled with a sense of compassion.

> "As we were snapping the excess top parts, Monique told me to save the ones that had snapped in half as we were pulling them and that she would use them to make dinner tonight. This was a distinct point of the no-waste mentality of the produce, an important way of acting sustainably, speaking to Monique's deep beliefs around utilizing produce to the fullest extent. Monique emphasized how gracious she was that I had come to help her with this piece of farmwork, as she had been putting it off for quite some time. She always makes me feel very appreciated when I visit her farm, something I am very grateful for" (Pennett fieldnotes, 10/18/2022).

Not only was I grateful for the shown appreciation of Monique, but I was grateful to be learning her values, which, I noticed, began to shift my own beliefs. No longer does it matter to me if I am eating the most perfectly formulated, bright orange carrot, presented on the stands of a commercial grocery store. Appearances don't reveal nutritional quality nor whether the carrots were produced ethically and sustainably. To me, real nourishment comes from understanding the nutritional components of what I am choosing to consume and understanding the labor and values that created the food item.

Wellness Through Regenerative Food

Food can be thought of as a commodity, a stress, a chore, an indulgence or insignificant all together in our modern lives. We have become isolated from hands-on food production. Regardless of class or access, food is rarely thought of as an enriching creation or a gift from the Earth. In the age of modern technology, there has been a significant drift from the consumption

of whole foods. Commercial production of food thrives on the notion that food must be mass produced in order to feed everyone and lower the price of food to the consumer. However, the reality of technological and chemical resources needed to produce this amount of food end up having high costs, not only economically, but to human health (Kimbrell, 2002). Regenerative agriculture not only holds significant physical health benefits compared to conventionally produced food, but also mental health benefits. Not only for farmers, but those who consume regenerative produce will have substantial mental health benefits due to the higher nutritional value, as "Findings indicate a reduction in the incidence of depression and suicide with a healthy eating pattern (15, 16)" (Grajek et. al, 2022). Studies comparing diet have been conducted solely on the premise of comparing a whole foods diet versus a diet filled with processed foods. Regenerative produce, having more nutritional value than commercially produced 'healthy foods' may be assumed to have an even stronger impact on physical and mental health. Thus, regenerative agriculture has a holistic impact on farmers' mental health, as well as the mental and physical health of those who consume regenerative produce. These benefits come from both the environmental good the process of regenerative agriculture provides and the higher nutritional value within the produce.

Meaningful Labor and Accomplishment

The work of a farmer is physically and mentally laborious, across any mode of agricultural production. However, regenerative agriculture presents potentially deeper mental benefits than those provided by mainstream, mass-production agriculture. While regenerative agriculture is more hands-on and smaller in scale, the emotional well-being of its farmers is shown to be more stable than those working on conventional farms. This stability and communal

support comes from the passion regenerative farmers have in carrying out their philosophies on their physical lands.

> As we were collecting flowers, Joe, the owner of the farm, came up on his tractor to ask me “So tell me, what is your project about?” I explained the topic of mental health and the impact of farming practices and being a regenerative farmer has on mental health. Joe nodded his head and spoke on how regenerative agriculture is more hands-on and physically demanding than commercial farming. However he made the point that even though the labor is more tough, it comes with a unique “sense of accomplishment” for the farmer. He went on, the farmers “can see the soil being replenished”. (Pennett fieldnotes, 09/12/2023).

Maybe seeing is believing, but these farmers truly believe in the work they do to benefit the environment and their land. On both Joe and Monique’s farm the quality of soil is uniquely enriched with life with worms, slugs and a plethora of microbes. It is in these practices which a sense of accomplishment can be found in the aspect of fostering a healthy environment. There are many moments of satisfaction and purpose being fulfilled on the farms. Both of the farmers I have primarily worked with often express moments of satisfaction and passion, along with gratitude for my presence in aiding the day’s work. In the first year of my fieldwork, this feeling intensified as the autumn season came to a close, and almost all of the regenerative produce had been harvested, shared, sold and celebrated. A chilly morning filled with sunlight and wet dew nipping at our feet, Leah and I gathered hay into a wheelbarrow from a main pile the farm had purchased. Hay or straw is often used at the end of a harvesting season in sustainable and regenerative agriculture.

> To end the day, the final task we did was spread hay over a few rows of strawberries right next to the road, preserving the plant as much as possible as nightly frost becomes more frequent. We worked very effectively, as we got done a little early and we both remarked how accomplished we felt. (Pennett fieldnotes, 10/25/2022)

A year later, Leah and I were once again preparing for the winter months, but participating in a different task- clearing flower beds. I directly asked her about how she felt while doing the farmwork day to day and how she was feeling, now, at the end of the season.

> As we were clearing the third or fourth bed, Leah commented on our work so far, saying it was satisfying pulling up everything. Following up on this comment, I asked "Do you feel like a lot of farmwork is therapeutic? How do you feel as you're doing it?" She began with a drawn out "Ummm…" and continued "I know it might be therapeutic for other people. I think farming is therapeutic if you can honor the pace of the land and yourself along with finding economic stability". She went on to list many factors that led her to feel slightly worn out in her experience, including her drive for perfection in the produce and how it will look as well as the many deadlines that she has to meet as a farmer. Beyond these factors, she also deals with a chronic health issue that flares up in doing so much physical labor. Leah said as the season winds down this time of year, however, she does feel the peace of being in the sun, in the crisp autumn air and in her own world as she goes through the tasks to prepare for winter. (Pennett fieldnotes, 10/24/2023)

This perspective surprised me slightly, as from my point of view, I've only seen farming as a rewarding connection with nature. It is a much different reality when it is one's source of income

and when the farm is dependent mainly on one person's work, in this case Leah. However, this does not detract from the passion Leah has for the environment and the work she is doing. During this time I talked with Leah about how the year has been on the farm and how she has been doing pertaining to her farmwork. She told me it had been a great production season due to the rain we had gotten this year and that harvesting has been plentiful. I asked her how this kind of plentiful production compares to past years. Leah told me that "it is definitely less stressful because there's so much" and so there is no worry of whether the quota for the shares would be met. However, she did mention that less people had signed up for shares, assumingly due to inflation of food prices in recent months (Pennett fieldnotes, 09/05/2023). During this fall season, I asked Monique about the impact on mental health, good or bad, that regenerative agriculture has from her perspective:

> As we were gathering our seed, I asked Monique how she felt about the extra physical labor it takes to farm regeneratively and how she feels about doing the farmwork, in regard to her mental health. She said if she tilled instead that she could have done the past hour we had spent preparing the crop bed in 3 minutes, however she strongly believes in the philosophy of regenerative practices, and looked at the extra work as a plus stating, "this is my exercise for the day!" She continued that she felt that this interaction with the land was important to her and this was her moment to connect with the land she is growing on. Monique takes pride in the ways she has developed her farm, stating "I love all of this. I created this. I get to hear my cow moo!" (Pennett fieldnotes, 11/02/2023).

Monique has a passion that proceeds all else, with a devotion to her farmland that bodes mental and physical benefits. She points to the physical atmosphere of her farm as something she has carefully cultivated, which benefits her wellbeing. Comparing Monique's experience with Leah,

in Leah's case, she does not own the land she farms on, however is responsible for just about every kind of produce the farm generates. Having this role as farm manager, compared to farm owner can explain the contrasting attitudes in doing the demanding labor of regenerative farmwork.

With the modern increase of social alienation and isolation in workplaces, this emerging work space can offer relief from typical work environments which cause burnout and depression, as Marx had theorized before the modern era. Regenerative farming follows a different philosophy than that of industrial capital productivity. Unlike these models in which work and the worker become a commodity, with sole values being efficiency and profit, the regenerative farming model produces a healthy crop and farmer. Regenerative farming is a critique and a protest against the capital systems in place both in the context of commercial farming and general occupations, in which the modern worker has been depleted of their passion and unique voice. Regenerative farmers actively fulfill their passion for environmental wellbeing through their work, which is unique to each farmer's knowledge of their lands.

IV. Sustainability as an Ongoing Cultural Construction

From Sustainability to Regeneration

In the eyes of regenerative farmers, regenerative agriculture is an advanced version of sustainability that increases the productivity of the soil by acting with values that increase the health and longevity of the farmland ecosystem. Sustainability and its applications to the agricultural community can be identified as having an environmental dimension, an economic dimension and a social dimension (Bowler, 2002). The environmental and social dimensions of sustainability are interconnected as they reinforce each other by manifesting what it means to farm sustainably. Regenerative agriculture has grown out of the goals of environmental sustainability and evolved beyond it. Regenerative farming can be thought of as a process of *becoming* (Gordon 2022), as regenerative agriculture is the result of evolving practices designed specifically around the needs of individual farms.

Monique distinguishes regenerative agriculture from sustainable farming in that, "Regenerative means actively trying to give the soil life, active in making things alive. In farming you need animals–the cycle of them trekking through the land- that's adding life to the farm, even having bees. I think you could be sustainable without animals but regenerative is working with the animals and their cycle and pattern of them being on the land." (M. Blais, personal communication, November 8, 2022). Learning from Monique's perspective, sustainable agriculture is not the ideal, but a starting point. Regenerative agriculture, by extension, utilizes specific elements on a farm to enrich the soils and prevent degradation and erosion. Throughout my time on Monique's farm and in working with her, Monique has made it clear that she deeply values her land and thinks of the soil as being alive. She also feels a strong need to preserve its biodiversity, which can only be at the highest level when no tilling and natural fertilizers are

used. She also mentions working with the natural cycle of animals, missing having cows graze on her farm. Since this interview, Monique has watched her two new cows graze the land and has used the manueur as natural fertilizer. The addition of two pigs has also added life to her farmland. When I asked Leah what distinguishes regenerative from sustainable farming, she gave a similar answer as Monique, citing the use of animals per acreage, as well as "not only hiring people with a minimum wage, but [with a wage that is] optimal for the work they are doing. Sustainable farming is not taking away, regenerative is what you can give back"(L. Bingaman, personal communication, November 12, 2022). An ideal regenerative farm is a closed and self-sustaining ecosystem able to endure external factors, such as drought and flooding. But it is also profitable enough to provide its workers a living wage. However, this pursuit must include open communication about the success and failures of different practices with other farmers. Regenerative agriculture follows this model as farmers are continuously sharing information about how to better enrich their soils, what products can be used to aid cultivation and how diverse farming practices can be adapted to the philosophy of regenerative agriculture.

The inclusion of diverse perspectives is what has and will continue to shape the ongoing development of regenerative farming. In the conventional model, what constitutes being a 'good farmer' is typically defined by the results (i.e. crop yields) of the farm. "Being considered a good farmer can be used to control in-group colleagues and also assert authority and legitimacy against other groups. Industrial farmers attribute social value to industrial practices and landscapes – claiming a certain rationality and cultural value as well as a concrete benefit of 'feeding the world' (Burton cited in Ofstehage, 2023). Regenerative farming offers the opportunity to recognize and integrate other voices and experiences into the conversation about how to make food. An extensive history of exclusion and oppression of Native Americans and

Black Americans has suppressed these farming cultures from the mainstream conventional farms we see today.

> For example, black farmers in the United States still fight for land and basic inclusion (Grim 1995) while black farmers' cooperatives and unions have in the past struggled for the rights of southern tenant farmers and supported alternative agricultural visions and practices (White 2017). Black farmers thereby not only fight for the right to farm: they also work for recognition of their farming expertise and experience, paralleling and contributing to the struggle for civil rights (McCutcheon 2019). American Indian farmers equally fight for the right to farm on their own terms while often facing condescension and pressure to adopt white farmer attitudes and practices (Biolsi 2018). (Authors cited in Ofstehage, 2023)

Because the methods, philosophy, and goals of regenerative agriculture are continuously evolving, vast cultural farming practices can be incorporated into this revolution. Native American spirituality and traditional farming practices, specifically, have been substantial in constructing some of the key principles every regenerative farmer carries with them.

On one of my first visits to Monique's farm, she emphasized the importance of acknowledging these unique histories, especially because of the Native American activity of the Susquehannock that had taken place in this part of Pennsylvania specifically. A big part of Monique's belief is to listen to the land and respect it, as it was passed down from the Native Americans (Pennett fieldnotes, 9/13/2022). She told me that she had the farmland traditionally saged to bless the land and recognize the spirituality Native Americans held toward the Earth. In conjunction with the spiritual connection Native Americans developed with their lands and with

nature in general, they also developed farming methods that have become the root of the contemporary principles of regenerative agriculture. Influence of Native American 'companion cropping' can be seen in modern-day intercropping, a common practice of regenerative farmers. "Companion planting was a technique implemented by Native American communities of the Northeast. Companion crops are planted together, as their symbiotic relationships aid the other in growing. The most famous of these is the "three sisters," which consists of the simultaneous cultivation of corn (maize), beans and squash in the same field" (IAROCCI, 2020). While the farmers I have worked with do not directly implement this method, I observed the practice of growing specific crops adjacent to each other on both of the farms I researched. Joe intentionally bordered rows of crops with long beds of flowers, including zinnias and dahlias, at both ends of the main crop-growing area. In her greenhouse, Monique grows a combination of crops in rows,herbs fill the middle of the house, while fig trees and tomato plants stand along the sides and corners of the greenhouse. Monique's pattern of planting honors the traditional farming methods of the Native Americans who farmed in this region long before the arrival of colonizers and settlers. Unlike mainstream modes of farming, sustainable farming practices are always developing as they are shared through casual conversation, allowing the perspectives of a diverse range of gender, race and class to be included, acknowledged, and even celebrated.

Acknowledging Diversity Within Regenerative Practices

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Knowledge Sharing and Shaping Cultures of Farming

My experiences in the world of regenerative agriculture paints an image that greatly contrasts with the one of conventional farming, which is one geared towards profit and a philosophy that favors a generalized approach to farming that can be adapted to any plot of land anywhere. In regenerative farming, by contrast, farmers adopt practices that acknowledge and take advantage of local variety and diversity in soil, land, and animals. When I witnessed the farmers interact with each other while physically participating in farming, they offered each other support and spoke about how to keep working toward an ideal version of sustainability. This sharing of knowledge not only occurred between farmers, but between the farmers and I as they educated me on what made regenerative agriculture so successful and unique. From simple conversations on the right proportions of natural fish fertilizer to use to what outside resources could be sustainably used on the farm, I witnessed so much talk about how to farm properly and effectively. An important conversation about what constitutes regenerative practices occurred when Joe mentioned his use of discarded coffee grounds that Starbucks donates to local farmers and gardeners. As we cleaned up our piles of weeds and washed up from our farm work that day, Leah questioned the ethics of using the coffee grounds, asking "was this fully organic? Is that supporting a sustainable brand?" (Pennett fieldnotes, 10/27/2022) In a formal interview with Leah, I asked about the dynamics of local farmers and how she saw herself included in that community. I wondered just how connected those who farm regeneratively and/or organically were, especially in such a rural area.

> Author: …do you feel like you gain a connection with those people? Like with each other in the community as regenerative farmers or like organic farmers or the farmers market yano what i mean?

> Leah: I think yes and no. Like certainly because of my position I've connected with Monique or I've connected with this guy Louis who has a farm or I've connected with Jen from Bucknell farm so I think yea there's definitely the potential for that. I think in the area we live in you have to be intentional about that and I think it's bifold because in small areas like this where there's not a lot of or where there's a certain amount of business sometimes that can create competition. I guess I saw that more in the service industry than in farming but it's still there and everyone's kind of checking out, like seeing what kind of practices everyone else is using like so and so may think this is organic, and so and so disagrees. So you still have elements of that and I don't know if you'll be in a community where that won't happen but if you are intentional in connecting with other farmers that opportunity does exist. (L. Bingaman, personal communication, November 7, 2023)

This *intentionality* is essential in participating in a farming community, especially a regenerative and/or organic farming community. "Communities associated with small-scale, less capital-intensive farming. . . may develop a richer community life" (Goldschmidt cited in Ofstehage, 2023). Leah elaborates on this concept: "intention is where there lies the potential for connection because I'm not just going and like taking up a list everyday and thinking about the end goal of 'a' to 'b' to get profit of 'c'. there's a much deeper interwebbing and intention that creates connectedness on multiple plains" (L. Bingaman, personal communication, November 7, 2023). Certainly the connections Leah has cultivated are visible in the way she conducts farm work with Joe or contacts Monique and another farmer, Louis, about the regenerative work they are doing on their lands. These farmers work toward finding the most effective sustainable practices, taking inspiration from each other to do their part in looking after the environment, a

goal that is constantly evolving. In my first year of fieldwork, Leah explained that they still plowed one section of Joe's farm because that field has been in production for less time than the main crop beds in the backyard. Leah did say that Joe would like to stop plowing all together and use, if possible, Monique's technique of placing tarps over sections of crops to preserve that section of farmland. Since discussing this with her in the fall of 2022, Leah and Joe have incorporated Monique's tarp technique at the beginning of the farming season to prepare the soils for cultivation. This technique allows for a smooth start to prepping the soil, without the use of a plow. Just about every aspect of regenerative farming requires an intentionality that comes from a holistic knowledge of diverse practices and natural resources that may be applied to uniquely benefit the land. On Monique's farm, this not only includes adapting to meet the needs of the soils, but the needs of her livestock as well:

> Monique had just purchased a new feed her friend Meesh recommended to her. As we unloaded it, I noticed that some of the original ingredients were crossed out on the label - she was shocked. I pointed out they had replaced the ingredients with "roasted soys". Monique was disappointed as I read this because she specifically wanted to avoid feeding her animals soy, particularly because of the past experience she had with her turkeys getting too big too quickly. (Pennett fieldnotes, 10/13/23)

This particular care and knowledge distinguishes the process of regenerative agriculture from other farming models. Here, not only a reliance on connections with other regenerative farmers, such as a local Amish farmer she knows, are obvious, but the connection Monique has with her livestock is visible as well in her insistence on allowing her farm animals to thrive instead of being a means for profit.

The culture of knowledge sharing was one I observed with not only farming practices, but in sharing food that was harvested in both of my field sites. My research informants were eager to have me taste while harvesting or to send me home with bags of fresh vegetables such as Swiss chard, carrots, and beets. As I harvested alongside them, the farmers I worked with regularly asked me if the produce was ripe enough.

Gordon, a scholar of contemporary regenerative agriculture, writes, "regenerative agriculture constitutes a boundary community that is integrative of multiple agricultural discourses" (2022). One such experience came as Monique, Leah and I took part in harvesting corn:

> We then harvested corn, which we tasted right off the stalk, after the "corn test" was not enough to know if it would be too starchy or not. The way the corn test worked was by sticking a fingernail into the corn kernel to see how starchy it was. We all, however, ended up tasting the sweet corn and agreeing it was ready to be picked. We filled three large baskets of corn and wheeled them back into the storage cooler, a wooden locker that keeps Leah's produce dry and cool (Pennett fieldnotes, 09/27/2022).

Being able to taste regenerative produce and to decide when exactly regenerative produce is ready to be picked is something I was extremely grateful to experience. I am lucky enough to watch this creation and to become part of the active discourse around regenerative produce. Just as the farmers consulted each other for guidance, they looked to me to share my perspective. Building these lasting connections and gaining this knowledge has been transformative in teaching me the emotional and psychological value of treating everyone working on the farm as an "expert" consultant.

The Truth Behind the Organic Label

The recognition of conventional agriculture's destructive nature and the ugly truth behind industrialized food production is becoming more and more prevalent in mainstream media. A variety of docu-series on the streaming platform Netflix, such as *What the Health* and *Poisoned* offer a glimpse into the world of food production and the various points of produce contamination, land degradation, and failures of government regulation. As awareness grows around environmental and health impacts of our commercial agricultural systems, demand for organic and local produce has increased. There is a wide range to these demands, however, with many people going only so far as purchasing produce and products labeled *organic* in the grocery store. As residents of a region with abundant farmland, many in Union County have begun to be active consumers of regenerative produce at local farmers markets. One of my informants, Monique, discussed this trend with me. She was especially excited about the trust that comes from forming a relationship between farmer and consumer.

> I asked Monique "Do you think there has been an increase in demand for local or organic produce, the kind of produce you grow?" She answered "Definitely yes." I pointed out the unique nature of this rural community and how an awareness of regenerative agriculture might be more easily spread in a close-knit community like this one. Monique agreed, citing her experiences at the market - "People want to know their farmer". She continued, people have said "Oh I know you, you wouldn't spray" to her, at the markets face to face. People in this community like knowing their farmer and like knowing certain farmers, such as Monique, are Certified Naturally Grown. (Pennett fieldnotes, 10/13/2023).

Distinguished from *organic*, Certified Naturally Grown farmers participate in a peer-managed system in which they inspect each other's farms to ensure everyone is upholding the "highest

ideals of the organic movement". The Certified Naturally Grown Organization defines the basic principles of this system on their website:

> CNG farmers don't use any synthetic herbicides, pesticides, fertilizers, or genetically modified organisms. CNG livestock are raised mostly on pasture and with space for freedom of movement. Feed must be grown without synthetic inputs or genetically modified seeds. Production practices are verified with detailed peer-review inspections annually, so the designation requires more rigor than making a pledge. (Certified Naturally Organic, 2023).

Distinguished from the USDA's National Organic Program, this grassroots movement encourages exchanges of knowledge between farmers as well as full transparency in reporting basic information about planting and yields, with CNG producers each having a public profile (Certified Naturally Grown, 2023). Monique has emphasized the importance of this model to the ways she conducts her farm and how she has developed important relationships with other local farms such as a local Amish farmer. When I asked her about how the model has encouraged open communication between farmers, Monique said,

> The Certified Naturally Grown certification is farmer to farmer So I've gone to see other farmers to certify their farm. It's really nice to talk with other farmers about what they use and to be reminded of things so when I went to certify Louis and Jane's farm and he's come to certify mine and he uses–and so does Joe–comfrey and nettles and ferment and that's like a compost tea sort of thing and then you can spray it on your plants. So when I went to certify Louis' farm it was like, "Oh yeah I've got lots of comfrey at my house, of course I'm going to get a five gallon pale and this is what I'm going to do", so it's nice to not be so

> disconnected and to find other farmers like minded and then you're working with each other and complementing each other. You're not competition, you're like "Oh you're doing the same thing as me. This is awesome!" and you're encouraging rather than like keeping all the secrets to yourself. (M. Blais, personal communication, March 26, 2024)

Routine inspections of CNG farms are conducted between a group of local farmers in which the farmers inspect each other's farms and offer feedback. As Monique expressed in our conversations, this system solidifies the trust among farmers who are certified and among others in the community. This type of communal trust and accountability does not take place for a consumer buying produce at a grocery store, even if it is tagged with the organic label. Growing up in a family that often purchased organic foods, my parents were unaware of the specific details that distinguished certified organic and non-organic. They would see the green and white "organic" label and without thinking twice, purchase the organic product, believing they are being shielded from exposure to dangerous chemicals by endorsing environmentally friendly produce. According to Forman, "Products labeled '100% organic' must contain only organically produced ingredients and processing aids (excluding water and salt). Products labeled 'organic' must consist of at least 95% organically processed ingredients (excluding water and salt); the remaining 5% of ingredients may be conventional or synthetic but must be on the USDA's approved list. Processed products that contain at least 70% organic ingredients can use the phrase 'made with organic ingredients' and list up to 3 of the organic ingredients or food groups on the principal display panel" (2012). While there is a great deal of wiggle room built into the federal government's approved organic label, Monique's customers have no question of the high quality and value of her product. They know exactly where their produce comes from and how it is

cultivated because of their face to face interaction with Monique at a farmer's market. Trust and communal relationships make the difference here..

Regenerating Our Lands, Bodies, and Souls

Regenerative agriculture is about more than using farming to heal the environment. It is a philosophy of how to nourish the soul. This mode of farming is an avenue to discover a symbiotic relationship with the natural world, through understanding the unique life cycles that occur in the environment around us. Through my research, I learned that regenerative agriculture transforms farmers as they find greater achievement and passion for their work while witnessing the life in their soils being replenished. These soils are able to adapt to a variety of unpredictable conditions. Regenerative farmers work with nature's evolutionary genius, to find ways to adapt to climate change, thus providing the farmers with a sense of stability and balance that is not present in other models. The impacts of regenerative agriculture also benefit those who consume regenerative produce:

> As we walked around the farm, discussing future projects [that] Monique and her husband may take on to expand their land use, Monique stopped in her tracks to tell me about a certain species of carrot she was cultivating. Bending over the rows of carrots, she pulled a couple out of the ground and offered one to me. We brushed off the dirt from the fresh harvest and as I took a bite out of the small carrot, Monique turned to me with a smile, saying "Now this is food. This is real food" (Pennett fieldnotes, 11/17/2023).

Epilogue

In the first phase of my research, I presented my research findings to my Anthropology 201 class. I focused on the transfer of knowledge and food sharing culture that I had observed between farmers, in which they continuously redefined what it meant to farm sustainably. I also discussed how they shared fresh, regenerative produce with me and each other. After almost two years of learning about regenerative farming, I find myself empowered to share what I have learned with another research community. Through a senior class for my other major, Environmental Studies, my projectmates and I worked with a non-profit to build a garden to be used at one of their safehouses. This non-profit serves men, women, and children in crisis, particularly in domestic abuse situations. Through the creation of this garden, I served as an advocate for regenerative farming and the many benefits it brings, including optimal nutrition, mental health benefits, and an increased understanding of the natural world. Being able to have this opportunity to share my knowledge to benefit a community of survivors, particularly in using regenerative agriculture as a form of care, has been very fulfilling. My hope is to impart this experience to the guests of the safehouse for years to come.

This brings into question, how widespread is regenerative agriculture? And will it be expanding in the coming years? It seems to be more widespread in this area, with a unique awareness built upon the nature of a small, rural community. This study has begun to uncover the communal realization of the hope regenerative agriculture offers for the future of sustainable and ethical food production.

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Appendix I

Interview with Leah, November 7, 2023

Amanda: Do you think regenerative farming and agriculture offers a unique sense of accomplishment and connection to the land that commercial farming doesn't have?
Leah: Certainly because regenerative is not looking um purely at quantity and how quantity relates to profit um and everything- in doing what you can do with as little as you could do it. So regenerative is first and foremost is focused on doing what's best for everyone involved so the land, the people, the fauna, etc. so there's a much deeper value system rooted in regenerative agriculture I would say

Amanda: Right so when you decided to, like, become a farmer, those learned values, do those stick with you as you farm, like 'I have this unique connection and unique accomplishment that I wouldn't get if I was, like, engaged in a different mode of farming if you know what I mean'?
Leah: Yea because yano I think, at least in my experience, at dreamcatcher, at the farm I'm personally working at, yano because everything is not all cost for profit I have the ability top kind of take my time and be meaningful with what I'm doing and when I'm doing it and which tasks im doing and taking into consideration and being mindful of like the time I'm doing them the way I'm doing them and the intention of doing them - sorry can you reiterate that question again?
Amanda: No you answered perfect

Leah: I guess to sum it up its because youre doing everything with some deeper intention, whenever it is you're doing whether you're farming or whatever im doing yano that deep intention to connect with the land, connect with the people I'm giving vegetables to, to connect with myself and what I'm offering…to connect with Joe, the people that i'm working with - that intention is where there lies the potential for connection, yano, because i'm not just going and like taking up a list everyday and thinking about the end goal of like a to b to get profit of c, yano there's a whole much deeper interwebbing and intention that creates connectedness on multiple plains.

Amanda: That's actually perfect you say that, that was kind of going to be my next question like in this particular setting, rural area like this farming you are doing, do you feel like these people who are engaging in this mode of farming, like do you feel like you gain a connection with those people? Like connectedness with each other in that community of regenerative farmers or like organic farmers or like the farmers market yano what i mean?
Leah: Um I guess I will…*sigh*
I think yes and no. Like certainly because of my position i've connected with yano monique or i've connected with um this guy Louis who has a farm or i've connected with um Jen from Bucknell farm so i think yea there's definitely the potential for that. I think in the area we live in you have to be intentional about that and I think it's bifold because in small areas like this where there's not a lot of or where there's a certain amount of business sometimes that can create competition. I guess I saw that more in the service industry than in farming but it's still there and everyone's kind of checking out like seeing what kind of practices everyone else is using like so and so may think this is organic and so and so disagrees. So you still have elements of that and i don't know if you'll be in a community where that won't happen but if you are intentional in connecting with other farmers that opportunity does exist.

Amanda: Right, awesome. Um ok so do you think there is like, from your own experience, or just in general do you think there is an increasing awareness of what goes in to food production like our modern system and thus a increasing demand for organic or regenerative produce…do you feel like people are more interested in what goes into food production in recent years?
Leah: Yea definitely i think there's definitely an increasing awareness of where food comes from and what's used to grow it and i think you can see that in the…even just in the yano the surge of farm to table restaurants or you go to subway and they have the list of farms they source from um and then even just with a lot more awareness around health and how these chemicals are affecting us. I definitely think there's an awareness especially with younger generations. I think there still is a disconnect between knowing what's a better product and healthier product and what people are willing to pay to commit to those healthier products because yano its more expensive to eat organic or regenerative because it requires more labor and um it - you're using more natural expensive inputs than you are in conventional farming as well and yano, people wanna be healthy but they also don't want to spend x amount of dollars on food

Amanda: Right right, so quick question that popped into my head - obviously theres a lot of farms in the area that produce a lot of different things and i remember our conversation around wheat production last year that interested me - do you think like… this thought popped into my head of like do you know the details if pesticide use in this area specifically? Like how do you see the impacts of erosion in the area?
Leah: I personally probably haven't been yano around long enough in one place to see the personal effects in this area of land degradation. I did study in rhodale institute where they do side by side trails of organic systems versus conventional systems and so yea some of the main things are in organic system because youre building the soil systems and youre feeding the creatures in the soil that are beneficial you have a much more adaptable product so yano this year we had an over abundance of rain and i definitely see the difference - and the summer before that we had no rain so i definitely do notice that on our farm with our regenerative system the plants have much more durability and adaptability to um extreme weather conditions whereas conventional yano if its dry they wouldnt have those root systems to tap down and get water deep in the soul or have the capacity to hold water and would stand a drought better yano or um its the same with excess water aas well so yes from that aspect and then personally in terms of health, so like dreamcatcher for example is surrounded by corn on like every angle and i - a lot of people plant whats called round-up ready corn so it contains i believe glyphosate which is like whats pretty detrimental to health um and so this corn has been brec to be able to withstand the rounduop being sprayed so it doesnt kill the corn but it kills weeds, pests whayever

Amanda: Wow so the corn is already filled with its own chemical makeup before being sprayed?
Leah: Yea so its sprayed but it's also genetically modified as well and so its the detriment to health is bifold its been genetically modified which we have no idea how that effects us but it certainly does and then its sprayed with pesticides which we know are harmful to health and I experience that personally because I was diagnosed with lyme disease and every summer like I just struggle and I have such terrible flare-ups because they come with a helicopter and they spray and when they harvest the corn it's like creating all of this dust and off gassing from all the pesticides and stuff and it just affects my health absolutely so yea I know firsthand that that's just bad.

Amanda: Wow that's incredible that it's gotten to a point where its that filled with chemicals
Leah: Yea and the other part of it is that these are what are called forever chemicals because they are compounds that do not break down and disappear from the environments so they are spraying every year every season and they're leaching into the ground, leaching into our water yano and like a filtering system is generally not gonna be able to filter that out so our exposure beyond just the spraying is inescapable and I think there's a stat that 98% of organic produce in america still have traces of glyphosate in it. So its just its in the environment
Amanda: Wow that's crazy to think of how much is sitting in the soil, air
Leah: Right it's just lingering

Amanda: Ok final question, more on the deeper side. In my background research I've found women and farming - that if women farm they are more likely to farm regeneratively so do you feel like this mode of farming has become a means for women specifically to have a blogger voice in constructing farming?
Leah: Yea I know what you mean like commercial farming is definitely a more male-dominated thing. It's hard to say, I think. Agriculture has generally been a male dominated - well I don't know - it depends on what culture you're looking at. And there's women getting more involved in this workforce. I think part of it is that maybe i don't know women tend to…the female energy tends to be a bit more nurturing and intuitive and slower and um so i think so i think because of that energy that women just naturally have i think we're more drawn to this regenerative agriculture because it has more of a feminine energy to it because you're nurturing and paying attention to delta and it's not just about an end goal of like how can we be productive and produce profits. I think it's that subconscious aspect that attracts women. i think because its smaller scale and you can do a lot with a little and tap into local market so i think it's a bit more accessible for people because i'm financially if you wanna do commercial farming you need to be able to get loans - ag loans - or you need to have a lot of capital to start because at that level you are industrial. If you start farming organically you can grow a crazy amount of food on only a quarter -acre or if you have a backyard like in school we visited people who were literally producing vegetables and selling to farmers markets just in their backyard so yea from also that

aspect it's so much more accessible finically for people to get into the door and start doing it and grow it from there whereas commercial you just like its takes so much capital to get into the door

Amanda: Yea i feel like its all or nothing with commercial farming.

Thank you for talking

Appendix II

Interview with Monique, March 26, 2024

Author: In my literature research I've found that women are more drawn to regenerative farm models than commercial farms? Why do you believe this is?
Monique: I think conventional farming–even just thinking about it right away–I just think of it as a traditional and male-dominated world…I don't see too much budging there and I think why women are more drawn to it is because of that–because of this renewal and inclusion, right, because renewal, regenerative means 'new' and 'maybe we can be part of it now'.

Author: Do you think one's personal image of the natural world has influence over what kind of farming one engages in? How does your picture of the natural world influence your farming practices?
Monique: Well yeah, it greatly influences it. I think from my own personal experience, I grew up rural and well, on a farm–my parents were not farmers but we lived on a farm–and so I think that greatly influenced me and i've always been drawn to the natural world m,aybe because of that and I was thrown into the natural world that way and i wasn't like a city girl. I couldn't imagine a city girl wanting to become a farmer so I was drawn to the natural way of doing things rather than the monocropping

Author: From your perspective, do you see nature as a force and something to be respected in that way almost as a being?
Monique: Definitely, and I think that relates to the Native American connection with the land is exactly that. Its not looking at this swamp area and the modern man would look at it as 'well what could we do with this? Could we make it a parking lot?" instead of looking at it and being like 'Oh, look at all these beings that live here already, we would be taking away from that' and not seeing the magic that's right in front of you.

Author: Have you seen land degradation around you firsthand on the local commercial farms bordering your farm ?

Monique: Yes I mean I can talk directly about our neighboring farmers. They have a plot of land near us…that he had an excavator come and take down all the brush and everything–he wants to make a pasture. What he did was he basically–it was a swamp, it was like a marsh–and what he did was just bulldozed it all, but what's happening with our 8 acres is that water needs to go somewhere and what's happening is because he is making his land into pasture, my land is becoming wetter and wetter. The marsh wants to go where it wants to go…its backing into our land, you know, our middle field is completely wet…where he wants it all flat and green, well he pushed everything away and now guess what, our land is wetter and were getting somewhat of a marsh pond area in what used to be our pasture.

Author: Could you tell me about a time you were influenced or inspired by another local farmer?
Monique: Well I can touch on Dreamcatcher because he uses Korean Natural Farming and I am intrigued and I've tried it on my own a couple times…it never really panned out for me but I learned a few things from him…The Certified Naturally Grown certification is farmer to farmer so I've gone to see other farmers to certify their farm. It's really nice to talk with other farmers about what they use and to be reminded of things so when I went to certify Louis and Jane's farm and he's come to certify mine and he uses–and so does Joe–comfrey and nettles and ferment and thats like a compost tea sort of thing and then you can spray it on your plants. So when I went to certify Louis' farm it was like 'oh yeah I've got lots of comfrey at my house, of course I'm going to get a five gallon pale and this is what I' going to do', so it's nice to not be so disconnected and to find other farmers like minded and then you're working with each other and complementing each other. You're not competition, you're like 'Oh you're doing the same thing as me. This is awesome!' and you're encouraging rather than like keeping all the secrets to yourself