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# Farmland Investment as a Vehicle for Environmental Conservation:

*An analysis of stakeholder attitudes  
and social impacts*

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## Executive Summary

As practiced, U.S. agriculture is a significant driver of biodiversity loss, greenhouse gas emissions, water pollution, water scarcity, and soil erosion. Research—and centuries of lived experience among Black, Indigenous, and People of Color (BIPOC) cultures—have demonstrated there is a better way to farm. Agriculture practices that are ‘regenerative’ in nature can help reverse these harmful trends by restoring the health of farming ecosystems and providing broad public benefits such as long-term water security and climate resilience. Although conservation tools and techniques exist, these practices have not been widely adopted by farmers across the U.S.

## Policy Challenge

Among the many barriers that prevent wider adoption of conservation practices, the following highlight a few key themes:

- Access to secure land tenure presents the largest barrier, yet taking on debt is one of the few avenues to land access and ownership for many farmers, especially new and BIPOC farmers.
- Nearly 40% of all farmland is leased, and of that, 80% is controlled by non-operator landowners (NOLs) who lack incentives to invest in the long-term health of their land.
- Capital gains taxes make it unlikely for substantial land transfer to occur outside of current land-owning families.
- Many farmers face barriers to accessing and benefiting from existing government conservation programs.
- Many farmers rely on government programs that disincentivize conservation practices, such as subsidized crop insurance and commodity price support programs.

## Policy Objective

Agriculture has a vital role to play in efforts to mitigate environmental degradation and support diverse farming communities. Given the political barriers to achieving rapid policy reform, this research explores how private capital might be leveraged to accelerate the adoption of conservation practices on a large scale:

*Can a private investment vehicle that owns and manages farmland catalyze a shift resulting in enhanced soil health on 25% of cropland (100 million acres) through ‘regenerative’ farming practices by 2030?*

Specifically, this report aims to determine if there is a farmland investment model that can be designed to accomplish this in a socially equitable manner that mitigates any potential negative social impacts.

## Key findings: stakeholder attitudes and social impacts

### Farmers

- Who (or what) owns the land matters.
- Financial benefits of an investment vehicle would need to outweigh other financing options that lower barriers to land access (e.g. loans from government programs or a local bank).
- Investors must share production risks with farmers, and farmers must be rewarded for improvements made to the land, ideally through crop share lease agreements.
- Autonomy over farming practices is highly valued and overly prescriptive stewardship standards are cause for concern.
- Distrust of investors and their motives leads to a general resistance to ‘outsiders’ coming to farming communities and buying land.
- Community buy-in is important and local ambassadors help to garner support.

### *Non-operator landowners*

- The majority of landowners report that land management decisions are primarily driven by the desire to protect their land for farming and for future generations of their families, seconded by the goal of preserving soil quality.
- Despite expressed willingness to support more conservation practices on their land, there may be a discrepancy between landowners' intentions and their actual behaviors.
- Especially given the tax incentives for keeping land in the family, it's unlikely landowners will consider selling their land at anything below its highest use value.
- Conservation is currently not a significant factor in succession planning and is unlikely to motivate most landowners to sell or donate their land.

### *Framing is crucial for stakeholder engagement*

- Given the heterogeneity of U.S. farms and the politicization of climate change, framing is critical for successful engagement with stakeholders.
- 'Regenerative Agriculture' is not well received by a diverse range of stakeholders for a variety of reasons.
- The most universally understood and accepted terms include 'land stewardship,' 'conservation,' 'soil health,' and 'resiliency.'

### *Potential positive social impacts*

- Social investment in farmland—which goes beyond just financial investment—could lead to beneficial outcomes for the environment, farmers, and their communities.
- An investment model that offers affordable access to secure land tenure and creates opportunities to build equity and/or ownership in land could lower barriers for disadvantaged groups.
- Leveraging private capital to catalyze the transfer of land to cooperatives or other forms of collective ownership by communities would help to democratize land ownership.
- An investment model may be able to garner bipartisan political support of associated policy reforms that would have broad environmental and social benefits (e.g. a government-sanctioned 'regenerative' stewardship standard or crop insurance reform).

### *Potential negative social impacts*

- Concentrating land ownership in the hands of investors will exacerbate inequities in land ownership.
- Investor returns on a farmland investment model must be accomplished through scale (via consolidation of ownership) and/or increased land value, which may price farmers out of the market or produce perverse environmental outcomes on neighboring farms (if they are pressured to prioritize cash crops to stay competitive).
- Investor ownership models can lead to extractive practices that negatively impact local communities, such as capitalizing on scarce resources like water.
- Investor ownership models inherently have a power imbalance that would favor the interests of investors over farmers.

## Considerations for a Pilot

Given the various potential negative impacts of farmland investment, a pilot should be conducted before pursuing a particular model on a larger scale. In addition to important due diligence, a successful pilot could serve as a powerful example of more effective uses of government funding (which could support future policy reform efforts) and would create unique opportunities for further research. Farmers and relevant communities should be involved in the design and evaluation of a pilot. Some specific recommendations for the design include:

- **Use a private equity model with guardrail mechanisms built in to protect broader public interests.**
- **Start with the farmer, then find the land.** The land selection process should be farmer centric as opposed to speculative.
- **Focus on farmers without land equity.** By targeting farmers who currently do not own land, the model increases its potential to lower barriers to land access and land ownership, particularly for those who have the most obstacles to overcome in the current system.
- **Focus on NOLs, especially around retirement age.** From a social equity standpoint, this is the most appropriate group to target. In terms of feasibility, challenges may be confronted given reasons listed above.
- **Prioritize a crop share model.** Ensure investors are not insulated from the risks that farmers are exposed to in the fields.
- **Use a flexible, practices-based framework for measuring ecosystem service outcomes that's connected to a set of ecological principles.**

## Recommendation

While it may be possible to design an equitable farmland investment model that encourages the adoption of conservation practices, it's unlikely to do so at the desired scale. Guardrail mechanisms would have to be built into a model to ensure that profit-seeking does not sway the fund's agenda away from public environmental and social benefits. Such mechanisms could include a combination of easements, B Corp certification, parameters written into the bylaws, and possibly third-party management or part ownership of a fund (e.g. a nonprofit). These will reduce the profitability—and therefore scalability—of a model, unless the government provides targeted support, such as tax incentives to investors or funding for the purchase of easements.

Although it may be worth exploring these mechanisms through a pilot farmland investment model (philanthropically funded), policy interventions will be required to implement the model at scale, in which case it is likely not the most efficient tool for catalyzing the needed shift in U.S. agriculture. It could be likened to driving a nail into floorboards with a screwdriver; it may be possible, but not without turning the tool upside-down and applying additional effort and ingenuity. The more efficient approach would simply be to grab a hammer instead—or policy reform, which directly addresses the many misaligned incentives embedded throughout the current system.

## Introduction

In the 1930s the Dust Bowl in the U.S. turned healthy soils across the Great Plains into dust. It was a result of droughts and heatwaves as well as the massive expansion of agriculture across prairie land that stripped the soils of their water and nutrients. Unfortunately, these are not just things of the past; today, farms are losing twice as much topsoil every year to erosion as the Great Plains lost annually at the height of the Dust Bowl.<sup>1</sup> For a sense of scale, 25.8 million acres of farmland was lost from 1982 to 2015 largely due to soil erosion, which is roughly equivalent to the size of Ohio.

As practiced, U.S. agriculture is a significant driver of biodiversity loss, greenhouse gas emissions, water pollution, and water scarcity.<sup>2</sup> All of these issues are linked to soil health. Healthy, nutrient-rich soils are essential for many reasons: they sequester more carbon, retain more water, produce higher crop yields, sustain more biodiverse ecosystems, reduce the need for chemical inputs, increase farm resilience—not to mention profits—among other things that are critical to the long-term health of humans and the protection of the environment.<sup>1</sup>

Research—and centuries of lived experience among Black, Indigenous, and People of Color (BIPOC) cultures—have demonstrated there is a better way to farm. Agriculture practices that are ‘regenerative’ in nature can restore the health of farming ecosystems and provide broad public benefits such as long-term water security and climate resilience. Although conservation tools and techniques exist, these practices have not been widely adopted by farmers across the U.S.

Why the disconnect? A considerable amount of research has been conducted to understand the barriers preventing the adoption of conservation practices. This report aims to highlight the most important barriers, identify gaps in the research, and expand on one theme in particular: requisites for conservation practices are currently incompatible with the business and social interests of landowners. The farmland on which our nation depends is primarily privately owned; therefore, the stewards of our soils must respond to a variety of market dynamics, often at the expense of the long-term health and preservation of the soil.<sup>3</sup>

This project aims to take a closer look at the role private capital can play to realign the interests of private landowners with broader public interests of environmental protection. It explores whether a farmland investment model, or a Farmland Investment Trust (FLIT) could be an effective vehicle for conservation by lowering barriers to secure land tenure for farmers and supporting more sustainable farming practices. Specifically, this research focuses on understanding relevant stakeholder attitudes (primarily farmers and landowners), as well as the potential social impacts of such an investment model and the implications for rural communities and socially disadvantaged groups.

## Objectives and Research Questions

The original idea for a FLIT was conceived as some version of the following:

*A FLIT model and accompanying set of policies would seek to establish a voluntary, financial incentive to accelerate the adoption of regenerative practices. Land ownership would be placed in a private or public trust; to be eligible to lease land from the trust, farmers must adhere to a set of regenerative practices, which will be tailored appropriately by region and crop. Transitioning to regenerative practices can initially require increased investment of capital and labor. To address this barrier, we will assess options (e.g., tax benefits, rent concessions, or other policies) that support farms and farmland owners through the transition period.*

*Similar to a traditional Real Estate Investment Trust (REIT), the investors' income will be generated from the rents collected from farmers. Farmers will be offered secure, long-term leases and possibly be given a buy-out option at the end of the lease term. The FLIT is therefore designed to encourage and aggregate new sources of capital to improve and rebuild the nation's soil as well as to make it easier for farmers to adopt regenerative practices on land they lease or own. The goal is to put large scale private capital to work with a focus on both returns on investments and healthy soil practices so we can increase the long-term quality and quantity of the nations' soils.*

***The overarching goal would be for a private investment vehicle that owns and manages farmland to catalyze a shift resulting in enhanced soil health on 25% of cropland (100 million acres) through 'regenerative' farming practices by 2030.***

For my portion of the project (one of three), specific research questions include:

- Is there a private investment model that can be designed to accomplish the above goal in a socially equitable manner?
- What are some of the potential social externalities that might result from a farmland investment model like a FLIT?
- What are farmer and landowner attitudes about soil health, conservation, and land ownership issues, particularly as they relate to farmland investment?
  - Under what conditions would farmers consider long-term leasing over land ownership?

These questions represent three broad categories, within each there are many more questions explored throughout this report.

## Methods

The research for this project began with a landscape analysis of the current research on farmland investment, as well as existing incentives for and barriers to the adoption of regenerative agriculture practices. We attended a number of webinars and online panel discussions on related topics, as well as the U.S. House Agriculture Committee Hearing on Climate Change and the U.S. Agriculture and Forestry Sectors on February 25, 2021. Our team then conducted upwards of 50 semi-structured interviews with a range of stakeholders (75+ individuals in total). These were information-gathering interviews designed for internal use for this project, not systematic scientific research.\* Due to the COVID-19 pandemic, interviews were conducted over Zoom or by phone. Stakeholder groups include:

- Producers (Owner-operators)
- Producers (Tenant farmers)
- Farmland Investment Companies
- Asset Managers and Investors
- Nonprofits and Advocacy Groups
- Agriculture Industry Associations
- Government representatives and policy makers
- Academics and policy experts

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\* These interviews were not intended to contribute to generalizable scientific knowledge and, as such, were not subject to the Human Subjects Institutional Review Board review.

In recognition of the diversity of experiences and perspectives within each stakeholder group, an attempt was made to include a range of views in the sample. However, given time constraints (four months), the sample sizes are quite small and the findings should be considered anecdotal. Proxies were primarily used to understand farmer and landowner attitudes in particular. In addition to the handful of producers and landowners interviewed directly, proxies included:

- Previously conducted survey studies and focus groups;
- California state-run roundtables and listening sessions with producers;
- Interviews with academic experts who have done considerable amounts of systematic research with farmers themselves;
- Interviews with advocacy and industry groups who work closely with farmers;
- and informal conversations with farmers' market vendors in California's Bay Area.

*Perspectives gathered from these conversations should not be overgeneralized to farmers across the U.S.*

Nonetheless, within these limitations, the interviews were designed to develop a high-level understanding of the potential challenges this project might face with respect to stakeholder attitudes. A qualitative analysis of the interviews with all stakeholders was conducted to identify themes and trends that emerged. This information was then synthesized in combination with findings gathered from the landscape analysis, the results of which are presented in this report.

Two graduate students from UC Berkeley's Goldman School of Public Policy, Anna Larson and Molly McGregor, contributed complementary pieces of research to this project as well, which will be referenced throughout this report:

- *Evaluating the Potential of Private Farmland Investment to Catalyze Regenerative Agriculture*, by Anna Larson
- *Investing in Soil Health via Regenerative Farmland Investment Trusts: A Policy Analysis and Pilot Recommendations*, by Molly McGregor

## Current lay of the land

### U.S. farmland ownership

Assessing the low adoption rates of conservation practices in agriculture first requires an understanding of the current lay of the land with regard to farmland ownership in the U.S. Most of the agriculture sector's asset value comes from land; nearly 83% of total farm sector assets in 2021 are real estate assets.<sup>4</sup> Land costs are typically the most substantial for farmers as well; for example, in 2019 land costs represented approximately 45% of total fixed and variable production costs for soybean producers. By way of comparison, labor was 6% of total costs.<sup>5</sup>

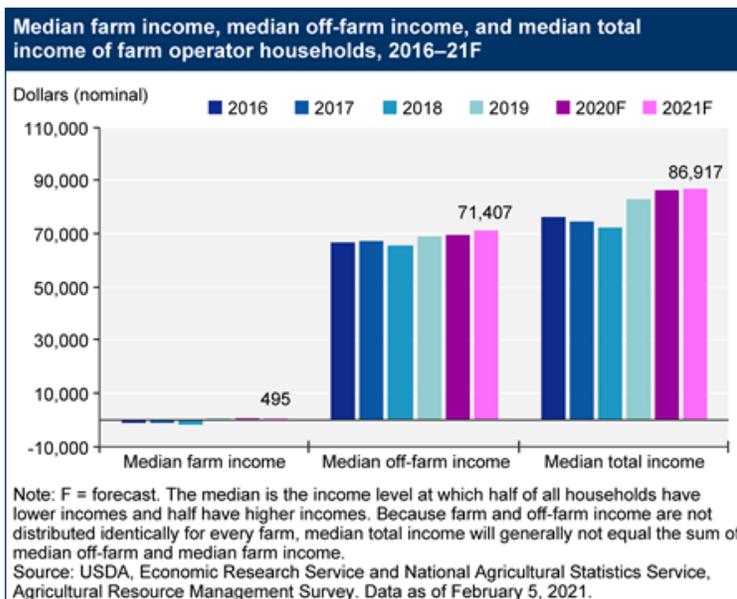
With the increase of housing and infrastructure development, farmland acreage has decreased (there was an estimated loss of 31 million acres between 1992 and 2012),<sup>6</sup> and land valuation is more likely to be based on the land's highest use value rather than its agricultural production value.<sup>7</sup> Farmland real estate values have increased nearly 60% since 2006.<sup>4</sup> Prices have been driven up in large part by increased interest in and ownership of farmland by foreign entities and domestic investors—both individual and institutional.<sup>8</sup>

Farmers are easily out bid by investors or developers; even when landowners intend to keep their land in farming, they are typically persuaded by the highest price.<sup>6,9</sup> This leaves farmers with very little purchasing power, especially given decreasing farmer net income (from 2013 to 2019, farmers' net

income decreased by 50%).<sup>10</sup> Many farmers operate at a loss—especially without added government support—and households often rely on off-farm income (see Figure 1). Declining net income is also due to increased production costs (e.g. chemical inputs and labor).

In the current system, for those who do not inherit land (or considerable wealth), debt is often the only vehicle through which farmers can buy land. Farmland real estate debt has sustained a steep upward trend over the past 30 years, and is projected to hit \$287.4 billion 2021, which is a record high.<sup>11</sup>

**Figure 1: Median farm and off-farm income**



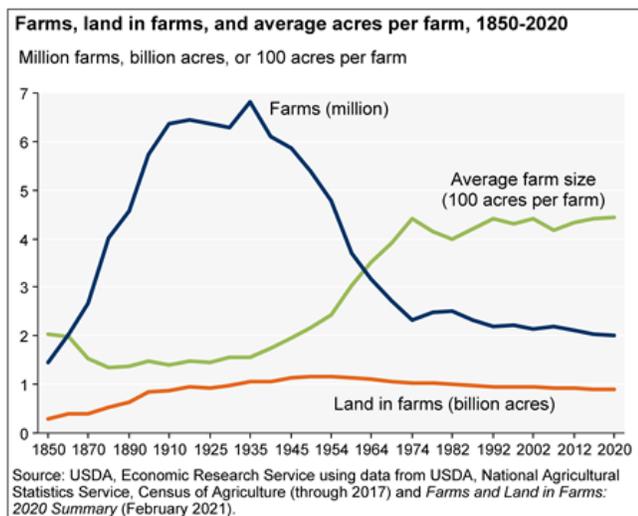
In the way of demographics, 98% of U.S. farmland owners are white<sup>12</sup> and nearly 70% of farmland is owned by people over 65.<sup>13</sup> These statistics highlight a glaring lack of new and beginning farmers, as well as BIPOC farmers who own land. As part of the push to usher in a younger generation of more diverse farmers, much anticipation has been built around a significant forthcoming transfer of land in the U.S. American Farmland Trust estimates that 40% of farmland could undergo a transition of ownership in the next 15 years, simply based on the average age of farmland owners and their inevitable retirement. But this estimate comes with a caveat. The commonly described ‘aging farmer problem’ is no accident; it’s a result of tax disincentives of transferring land ownership within one’s lifetime,<sup>13</sup> the increase of mechanized farming operations, and rural depopulation.<sup>14</sup> Meanwhile, entering into farming has become an increasingly dubious prospect for anyone without access to a fair amount of capital, for reasons mentioned above. These realities give reason to caution against overestimating the impacts of this ‘great land transfer.’ Without a shift in the legal and political underpinnings of the agriculture sector, we are unlikely to see much of a change in the type of people who own farmland.

Another significant factor in the farmland ownership landscape is that nearly 40% of all farmland is leased, and of that, 80% is controlled by non-operator landowners (NOLs), who are not actively involved in farming the land they own.<sup>13</sup> Research has identified numerous challenges associated with leasing arrangements between tenants and NOLs that impact the adoption of conservation practices, which are explored in further detail below under [Misaligned incentives for landowners and tenants](#).

The considerable consolidation of the agriculture sector in recent decades has also shaped land ownership, with the number of farms declining while the sizes of farms increase (See Figure 2).<sup>15</sup> This is partly due to increasingly loose interpretations of antitrust laws that have allowed many corporate mergers,<sup>14</sup> as well as sparse oversight of the Farm Credit System, which provides far more support to large agribusiness companies than it does to small farmers (for example, in 2016 only 15.5% of the total dollar value of loans from the Farm Credit System went to small farmers).<sup>16</sup>

Subsequently, the largest producers tend to be commodity crop farmers who's farming practices are most heavily influenced by agribusiness companies that control the supply of chemical inputs such as fertilizer and pesticides, as well as government funding (e.g. subsidized crop insurance and commodity payments). Large producers are thus operating under many disincentives to adopt more conservation practices on their land.

**Figure 2: Substantial consolidation of farms**



### Soil health and conservation

U.S. agriculture is significantly impacted by climate change through rising temperatures and extreme weather patterns such as floods, droughts, and wildfires.<sup>1</sup> These trends pose a threat to farm ecosystems, production yields, and rural livelihoods. Additionally, U.S. croplands are losing up to 3 billion tons of topsoil every year. Industrial agriculture methods tend to strip the soil of its nutrients, leaving it more vulnerable to erosion. If nothing is done to change course, it's estimated the U.S. can only sustain another 60 harvests as we know them.<sup>17</sup>

Agriculture also contributes to climate change; in 2019 the sector produced 10% of the total U.S. greenhouse gas emissions.<sup>18</sup> Soil health influences agriculture's carbon footprint because healthy soils sequester more carbon. While healthy soils alone are limited in their ability to produce large scale emissions reductions,<sup>19</sup> they are a foundational piece to a climate-smart agriculture system that can sustain broad ecosystem service benefits over the long term.

There are a number of conservation practices that enhance soil health, including no-till farming and cover cropping, which aim to retain more organic material in the soil by keeping crop residue mulch on the soil surface.<sup>20</sup> Farmers and ranchers across the United States are participating in some version of these practices, and many others, to some extent. But their level of integration across farms remains very low, despite a handful of existing government conservation programs that provide incentives for adoption of these practices.\* Cover crops, for example, are only implemented on 5% of cropland in the U.S.<sup>21</sup> Less than 1% of U.S. farmland is certified organic, and although organic farming does restrict harmful chemical inputs, it is not necessarily 'regenerative,' and would require additional modifications of farming practices to produce a substantial shift in environmental outcomes.

\* For more details on existing government conservation programs, see *Evaluating the Potential of Private Farmland Investment to Catalyze Regenerative Agriculture*, by Anna Larson.

## Regenerative agriculture

Soil health—while fundamental to healthy agriculture—is closely interconnected with many other elements of an ecosystem. Overly narrow framing of a problem tends to lead to overly narrow solutions, so it is in our best interest to broaden our focus beyond soil health and consider the holistic systems to which it belongs.

A nature-based systems approach reflects the concept of ‘agroecology’ and an Indigenous worldview of ‘kincentric land stewardship,’ which encompasses a deep relationship to land that inherently values sustainability.<sup>22</sup> In a world before chemical pesticides, advanced technologies, and crop insurance, BIPOC land stewards thrived in an ecosystem of finite resources. It wasn’t a matter of just preserving those resources, but using them in such a way that fosters their regrowth and regeneration. For BIPOC farmers, agriculture had to be regenerative because survival required respectful interaction with nature’s holistic systems.

Fast forward through decades of land dispossession, discrimination, and government policy that have shut BIPOC people out of agriculture,<sup>23</sup> replacing it with homogenized production incentivized almost exclusively to maximize yield.<sup>24</sup> As the soil erodes under our feet and we are reminded of the finite resources of this warming planet, ‘regenerative agriculture’ has suddenly been idolized as the solution to a sustainable food system. It is no wonder that BIPOC land stewards resent this term as a repackaged Western framing of Indigenous knowledge or Traditional Ecological Knowledge (TEK).<sup>9</sup>

*“The debate over what regenerative agriculture means, and who gets to decide, spills over into the issues we care most about. It touches on our changing relationship to science and technology, on access and antitrust reform, on workers’ rights and racial injustice, on conceptions of the natural world and our place in it.” – Joe Fassler, Deputy Editor, *The Counter**

In light of this historical context, the term is used cautiously throughout this paper, and with deep respect for its Indigenous origins. ‘Conservation’ is the primary term used instead, with the caveat that I am referring to practices that regenerate resources in addition to simply preserving them. Despite the risk of oversimplification, ‘conservation’ is less culturally and politically fraught and is widely used and understood (see more on this under [Why framing is crucial for stakeholder engagement](#)).

The term ‘regenerative’ is useful because it is descriptive in a literal sense, but there is much debate over the actual definition of ‘regenerative agriculture.’ Some definitions focus more on environmental aspects, while others include a more holistic description, such as, “a system of land stewardship, rooted in centuries old indigenous wisdom, that provides healthy, nutrient rich food for all people, while continuously restoring and nourishing the ecological, social, and cultural systems unique to every place.”<sup>17</sup>

The definition debate will not be explored here, but it’s important to note in light of efforts to quantify and profit from the benefits of regenerative agriculture. Understanding the science of regenerative agriculture is complex enough in itself. But the ecological aspects of regenerative agriculture cannot be disentangled from the social, economic, and political context in which it exists.<sup>24</sup> Therefore, a call for enhanced soil health is a call for regenerative agriculture, which is a call for the diversification of land access and ownership, which is a call for a shift in the power balance of the system, which very likely requires a different set of underlying values.

The current value system on which U.S. agriculture is built is reflected in the barriers that are currently preventing the adoption of regenerative farming practices, which are explored in the following section.

## Key barriers to wider adoption of conservation practices in agriculture

A considerable amount of research has been conducted to understand the relatively low implementation rates of conservation practices in agriculture.\* Farming operations across the U.S. are incredibly heterogeneous, so these barriers do not apply consistently across the spectrum. However, the issues listed below summarize the most important barriers identified in previous research that have also surfaced in this project's interviews.

### Lack of access to land and financial capital

Barriers to land access and insufficient capital undermine many farmers' ability to succeed in farming at all, not to mention their ability to adopt conservation practices.

#### Land access

Land access and secure land tenure are consistently cited as the most substantial obstacles farmers face.<sup>6,25</sup> For reasons mentioned above in the section on [U.S. farmland ownership](#), farmers' buying power has depreciated against rising land values of limited available farmland.

In particular, long-term, secure land tenure is the biggest barrier to success for beginning farmers.<sup>26,9</sup> Younger farmers typically rent a larger portion of the land they operate<sup>13</sup> and approximately one third of young farmers rely entirely on rented land.<sup>27</sup> Farm incubator programs exist through the USDA's Beginning Farmer and Rancher Development Programs (BFRDP) that provide subsidized leases, training, access to business support, among other benefits, but they often fail to support farmers trying to transition *out* of the program, where land access with secure tenure presents the biggest hurdle.<sup>7</sup>

*"Limited land has a number of cascading consequences: limited revenue and profitability, which creates limited access to help, which creates limited access to markets, which persists limited revenue and profitability, and round and round we go." – Chris Newman, Founder, Sylvanaqua Farms*

Decades of structural racism within the USDA have increased barriers to land access even more substantially for BIPOC farmers.<sup>12,23</sup> Race and ethnic identity also add to cultural and communication barriers that influence landowners' selection of tenant farmers to operate their land.<sup>25,28</sup> Even among tenant farmers in the US, only 14% are BIPOC, while the majority of farmworkers are BIPOC, with 80% identifying as Hispanic.<sup>12</sup> BIPOC farmers are more likely to use regenerative practices from their cultural traditions, but barriers to land access present an often insurmountable hurdle.<sup>17,22,29</sup>

#### Access to Capital

Upfront capital costs for any new aspect of a business are expensive and costly to maintain, including the integration of conservation practices on a farm. Many farmers face challenges accessing funding to support those transitions. Loans from the USDA's Farm Service Agency (FSA) as well the majority of

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\*For a deeper dive, refer to: O'Connor J. *Barriers For Farmers & Ranchers To Adopt Regenerative Ag Practices In The US; Identifying Key Levers and Opportunities*. Patagonia; 2020.

credit provided through the Farm Credit System tend to go to farmers who already have secure land tenure (who tend to be established, white, male farmers).<sup>7</sup>

Banks and lending institutions are often reticent to finance the transition of on-farm conservation practices because the economic returns are not yet well understood and it can take several years for farmers to show a positive cash flow.<sup>17</sup> Most farmers are reliant on operating loans, which are typically offered annually. This system disincentivizes the experimentation with new conservation practices. Most lending institutions have not adjusted their rates to reflect the increased resilience and reduced risk to the farm that some conservation practices are known to provide, such as cover crops. The Farm Credit System and local lenders play a powerful role in supporting producers through on-farm transitions, and they will need to place more value on conservation practices.<sup>17,30</sup>

*“Lenders have a blind spot when it comes to understanding the connections between conservation adoption and farm finances, and incorporating that information into lending decisions.”*  
– Maggie Monast, Environmental Defense Fund

### Misaligned incentives for landowners and tenants

As mentioned earlier, nearly 40% of all farmland is leased, and of that, 80% is controlled by non-operator landowners (NOLs). Most tenant farmers rent from multiple landlords and 70% of lease agreements are renewed annually, which represents 57% of rented farmland acres.<sup>13</sup> It’s estimated that tenant farmers make 64% of decisions about permanent conservation practices and 82% of decisions about annual conservation practices on land they operate that’s owned by NOLs.

Research on the impacts of tenant-landlord agreements on the uptake of conservation practices is still evolving, particularly because most studies concentrate on a specific region, so results may not be generalizable. Overall, research suggests that in comparison to an owner-operator, tenants are less likely to adopt conservation practices that will provide only long-term benefits<sup>31</sup> and are less likely to implement conservation practices in the early years of land operation.<sup>32</sup> Land operators are also far more likely to invest in conservation practices if they will receive a share of the benefits.<sup>27,33,32</sup> Beyond these logical findings, the influence of tenant-landlord models on the adoption of conservation practices varies depending on the nature of the rental agreements as well as the type of conservation practice in question.

*“For tenant farmers, precarious landlord relationships & insecure land tenure discourages long-term investments in infrastructure and ecosystems—like soil health—when the tenants may not reap the future rewards of capital or environmental improvements.”<sup>26</sup>*  
– Dr. Adam Calo,  
The James Hutton Institute

### Rental Agreements

The two main types of rental agreements—cash rent and crop share—have a sizeable impact on the adoption of conservation practices. Cash rent leases can have fixed or flexible payment terms. A fixed cash rent model requires tenants to pay a fixed dollar amount, usually per acre. Although these leases tend to give tenants more autonomy over decision-making, tenants also carry the majority of the risk. Government subsidized crop insurance programs such as Revenue Protection insurance provide risk protection for tenant farmers, but this also reduces incentives for landowners to mitigate risk by investing in the health and resilience of their land.<sup>34</sup> Additionally, a fixed cash rent agreement reduces

the likelihood that a landowner will be considered as ‘materially participating’ in the farm operations, which NOLs may prefer for tax purposes (under material participation, income is subject to self-employment taxes and is not calculated as earned income for social security payment adjustments if the NOL is retired).

Under a flexible cash rent model, the rent paid to the landowner depends on yield and/or available selling prices, which distributes more of the risk, while still maintaining farmers’ autonomy. Flexible cash rent is the least common type of model, perhaps because the agreements are far more complex in nature, and can be difficult to agree upon as well as manage.<sup>13</sup>

Under crop share leases, landowners share an amount of the input costs with the tenant, as well as a proportional share of production proceeds. Although there are some regions and farm types with higher prevalence of crop share arrangements, approximately 70% of farmland rental agreements use a cash-rent model with fixed payments.<sup>13</sup> There has been a notable shift toward cash rent agreements over the last 30 years, which provides landowners more stable income (from which the payments are also easier to divide among multiple owners if the land is co-owned). The simplicity and transactional nature of the cash rent model also appeals to NOLs who may be farther removed from their land.<sup>34</sup> The implications for land conservation are substantial, as studies show that tenant farmers are less likely to invest in conservation practices under a cash rent model.<sup>3</sup>

### *Conservation Practices*

As for conservation practices, no-till farming appears to be the outlier from otherwise relatively consistent trends showing lower adoption rates of conservation practices on rented land. In Iowa, for example, tenants are less likely to implement crop rotation, cover crops, buffer strips, or sediment basins than landowners.<sup>33</sup> However, tenants are more likely to practice no-till than owners, who may be more concerned with the ‘messy’ appearance of their farm.<sup>35</sup> Tenants may also benefit from short-term profitability that no-till can provide through reduced labor time and lower energy costs.

### *Cultural and Communication Gaps*

Rental agreements, particularly with NOLs, can increase communication challenges and transaction costs when applying for government conservation programs.<sup>32</sup> Communication gaps tend to widen between tenants and women landowners, who comprise a significant and underappreciated group of NOLs (37% of all NOLs are women).<sup>12</sup> More on the role of gender in tenant-landowner dynamics is discussed further below under [Landowners](#). Lease negotiations are also complicated by racial tensions and sociocultural differences, which tend to be overlooked factors in tenant-landlord relations.<sup>7</sup>

### **Limitations and perverse effects of government support**

The USDA’s National Resource Conservation Service (NRCS) provides farmers with funding opportunities to support the implementation of conservation practices on their farms through programs such as the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP). In practice, these programs are often inaccessible, especially for smaller producers and BIPOC farmers.<sup>12,25,36</sup> Some eligibility requirements are barriers themselves, such as acreage minimums and secure land tenure.<sup>29</sup> Producers typically co-invest in any changes made to their farms through these programs at around 50%, but program benefits can take a long time to receive, so farmers with short-term leases and lack of capital rarely make viable candidates.

Many new and BIPOC farmers also are simply unaware of state and federal government conservation programs because there is very little targeted outreach.<sup>25</sup> When BIPOC producers do connect with government offices, there are often cultural and communication barriers, as well as burdensome administrative paperwork.<sup>7,25,29,36</sup> There is also a lack of trust in the USDA among BIPOC farmers, given its history of discrimination, which came up in a number of interviews conducted for this project.<sup>23</sup>

Additionally, conservation efforts are undermined by some of the largest government support programs offered through the Commodity Credit Corporation (CCC) and the Federal Crop Insurance Corporation. Crop insurance, which spends between \$8 and \$9 billion per year and covers 80% of arable farmland,<sup>37</sup> drives 95% of producer's planting decisions.<sup>17</sup> Crop insurance provides both revenue protection and yield protection, which incentivize farmers to plant as much as possible, even if it means expanding their operations onto flood-prone or highly erodible land. The majority of the funding from both crop insurance and commodity price support programs goes to large commodity crop farmers, who are more likely to use farming practices that deplete the soil (among other negative environmental impacts), such as monocropping, tillage, and overreliance on chemical inputs.<sup>37</sup> Additionally, some eligibility requirements for crop insurance actually stand in contradiction to conservation practices encouraged by the NRCS. It has been estimated that without reform to the current crop insurance program, federal expenditures will increase by an average of 31% by 2080 with moderate global warming, and up to 65% under circumstances of more extreme warming.<sup>38</sup>

The CCC, which is a government-owned corporation with no real assets or employees, has distributed \$1.1 trillion in direct farmer payments since 1933.<sup>39</sup> Given the impact of these programs on farming ecosystems, critics are questioning the CCC's strategy, or lack thereof. If redirected, the CCC's funding would provide a powerful tool to protect the environment, reduce inequities in agriculture, and uplift farmers so they can reduce their reliance on government support.<sup>24</sup> For many producers, government funding represents a remarkable proportion of their net farm income. For example, across farms in Kansas, more than 70% of net farm income came from government payments in 2019 (and that's before additional support was provided during the COVID-19 pandemic).<sup>40</sup>

*“Regenerative agriculture is what every producer would do if they were freed from the confines of this commodified system.”<sup>24</sup>*  
– Zach Ducheneaux, Executive Director, Intertribal Agriculture Council & member of the Cheyenne River Sioux Tribe

### Lack of market access and supportive supply chains

Supply chains also play an important role in supporting regenerative agriculture practices. Producers need to be paid a premium for the extra costs they take on to transition their farms, especially because they already receive such a small share of the retail dollar.<sup>17</sup> Many producers—especially smaller and BIPOC farms—have a hard time competing for market share at all in the shadows of multinational food producers. These large-scale companies can produce high yields, acquire expensive certifications, and vertically integrate to control food production, processing, and distribution. Without local buyers, markets, and supply chains that value conservation practices and account for the resulting ecosystem services, making on-farm transitions is exceedingly difficult for smaller producers.<sup>41</sup>

Even for large companies, of course, downstream consumer demand has significant influence on their operations. From 2013 to 2018, 50% of Consumer Packaged Goods (CPG) growth came from products with marketing focused on sustainability.<sup>42</sup> Studies also estimate that nearly 80% of consumers are changing their purchase preferences based on sustainability.<sup>43</sup> But without a government-sanctioned

certification (like the Organic certification), demand is difficult to quantify and attach a premium to. (However, certifications and rating systems present their own challenges for producers to navigate as they are costly, sometimes contradictory, and often overly rigid in the face of shifting environmental and economic trends.<sup>44</sup>)

In the last year, a handful of corporations have made commitments to integrating regenerative agriculture into their supply chains, such as General Mills, McDonald's, and Target.<sup>45</sup> Improbable alliances are popping up, such as the Rodale institute and the Nature Conservancy both partnering with Cargill on efforts to support organic and climate-smart agriculture.<sup>46</sup> It remains to be seen how these commitments will play out, particularly for producers. Beyond the risk of greenwashing, critics cite concern that agribusiness is 'cherry-picking' a few regenerative practices to tout, but avoiding the larger systemic changes needed to support an industry shift toward sustainability.<sup>47</sup> Evidence-based research will help to keep these efforts honest, but many of the multifaceted benefits of regenerative practices are difficult to measure (especially cost-effectively) and play out over a relatively long time horizon.\*

### Psychosocial and Behavioral factors

Beyond food production and conservation, farming practices are connected to cultural factors, personal identities, and value systems.<sup>17</sup> As behavioral science has shown, there are many psychological and social drivers of human behavior. Research is limited on these topics as they relate to agriculture, but one study suggests that the ways in which farmers self-identify (based on their perceptions about how farming should be practiced) influence their assessment of climate change and willingness to implement conservation practices.<sup>48</sup>

Social norms and peer pressure—for example around having neat rows of tilled fields—can also have a significant influence over farming practices.<sup>3</sup> Farm aesthetics may serve as form of 'social signaling' that could be connected to farmers' reputations or even their access to social capital in their communities. Many farmers' behavior is simply determined by the status quo, or how their fathers and grandfathers farmed before them. Status quo bias makes people less likely to change behaviors, even when there may be logical benefits to doing so.<sup>49</sup> The result is a consistent preference for convenience. As explained by Adam Chappell, a farmer in Arkansas who moved away from conventional practices to save his farming operation: "*Farming has become a convenience-first enterprise, and not a profit-first enterprise. So many of the things I see in farming that make no sense really come down to convenience.*"<sup>50</sup>

Farmer behavior is also likely influenced by present bias, which refers to the cognitive tendency to value smaller immediate gains over long-term gains that are larger by comparison.<sup>51</sup> This phenomenon is particularly relevant to longer-term farm transition processes. These behavioral barriers to the adoption of conservation practices have been under-studied, although they came up anecdotally in many of the interviews conducted for this project.

Additional insights from behavioral science should inform further research in this area to better understand the effects of these cognitive and behavioral mechanisms on farming practices, as well as to shape policy design and the framing of future communication efforts, which are discussed below under [Why framing is crucial for stakeholder engagement](#).

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\*For a more in-depth exploration of some of the challenges associated with measuring the benefits of regenerative agriculture, refer to: *Investing in Soil Health via Regenerative Farmland Investment Trusts: A Policy Analysis and Pilot Recommendations*, by Molly McGregor

## Education and technical assistance

Farmers and ranchers across the U.S. know their land best. Many already use conservation practices to some degree, but they have largely been pushed away from a more regenerative approach and toward technologies that reduce the need for skilled labor.<sup>24</sup> Therefore, learning and implementing a new suite of practices takes time and resources that many producers don't have.<sup>17</sup> Technical assistance is needed from experienced practitioners of agroecology who can provide education on conservation practices in a region-specific and culturally appropriate manner. BIPOC land stewards have been grossly underappreciated as experts in this field, many of whom are farmworkers in the current system.<sup>24,39</sup>

Training and education are typically designed for land-operators, but there is a growing need for resources to be targeted and tailored to landowners as well (specific recommendations are listed under [Additional leverage points to consider](#)).<sup>32,33,52</sup> However, education alone, without the systemic and structural changes needed to support it, is far from enough to enable the necessary changes toward climate-smart agriculture in the U.S.<sup>28</sup>

## Farmland Investment as a vehicle for environmental conservation

Policy reform is needed to reduce the many barriers preventing the wider adoption of conservation practices in agriculture, but with a polarized U.S. government mired in the politicization of climate change, meaningful reform may not happen quickly enough. Here we turn to examine how private capital might be leveraged to advance these efforts.

### Financialization of Farmland

The financial sector's interest in land as an investment vehicle began to gain momentum in 2007, around the time when the Teachers Insurance and Annuity Association (TIAA) began purchasing farmland through its investment portfolio (as of 2017, it controlled 1.9 million acres of farmland worldwide).<sup>8</sup> Farmland prices tend to increase with inflation, but are relatively isolated from the prices of stocks and bonds. Both individual and institutional investors began to view farmland as a way to diversify and reduce overall risk of investment portfolios, hedge against inflation, and build wealth over time through appreciating land values.

Two of the more common vehicles used to invest in farmland are real estate investment trusts (REITs) and private equity funds.\* REITs are companies that pool the capital of investors to purchase real estate properties (in this case farmland), which are rented to farmers, generating income for the REIT. 90% of this income is distributed to the REIT's shareholders as dividends, exempting the REIT from corporate taxes (a 'pass-through entity'). Most REITs are publicly traded and therefore highly liquid.<sup>8</sup>

Meanwhile, private equity funds pool capital from investors to buy private companies or properties like farmland, which are then improved through various means and eventually sold for a profit. The investors receive their original investment capital in addition to their share of profits, minus fees paid to the fund managers.<sup>53</sup> These funds typically tie up capital for 7 to 10 years.

These and other investment models that have been purchasing farmland has resulted in an increase in absentee landownership of a very complex and corporate nature.<sup>54</sup> Out of concern for the impact of corporate ownership and consolidation of agriculture on family farms and farming communities, 9 states

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\* For more details on these and other farmland investment models, see *Evaluating the Potential of Private Farmland Investment to Catalyze Regenerative Agriculture*, by Anna Larson.

have passed anticorporate farming laws that restrict or prohibit agricultural production from nonfamily corporations: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, and Wisconsin.<sup>55</sup> Apart from these laws, little exists to prevent the continued acceleration of this trend of private capital buying up farmland, which has been called the ‘next land grab.’<sup>8</sup> For many of the reasons described in the section above, few farmers (or people trying to get into farming) have any chance of competing with companies that can pay top dollar for land. Additional externalities that result from the financialization of farmland are discussed under [Potential negative social impacts](#).

### Leveraging private capital to protect farmland

Instead of farmland investment being used as a ‘tool of absentee investment,’<sup>54</sup> what if investment models were designed as a tool for intentional investment committed to the long-term health of our soils, ecosystems, and farming communities? A subset of impact investors is beginning to recognize the role resilient agriculture must play in our efforts to reverse climate change.

Currently, Farmland LP and Iroquois Valley Farmland REIT are the two most prominent examples of farmland investment vehicles designed to advance environmental outcomes, which are operating at a slightly larger scale. They both purchase land and rent it to farmers with the goal of supporting organic farming, though they have different models and approaches to their work (broken down below).

	Entity Structure	Land	Investors	Approach	Stewardship requirements	Support Provided	Lease
<b>Farmland LP</b>	LLC & REIT; B Corp Certified	Owns 15,000 acres in 3 states	Accredited	Land selected first, then farmer identified	Organic; active management (employs some farmers directly)	Infrastructure, transition to organic, crop rotation plan, market opportunities	Short to mid-term leases; no buyout option
<b>Iroquois Valley Farmland REIT</b>	REIT; Public Benefit Corp. & B Corp Certified	Owns or provided financing for 13,000 acres in 15 states	Accredited & non-accredited	Farmer selected first, who identifies desired land	Organic; no farm management	Capital improvements, line of credit, and mortgages (in states with anticorporate farming laws)	Long-term leases with indefinite renewal & buyout option

The details of these and other investment models matter a great deal in attempting to evaluate their impacts—both intended and unintended. Not all impact investors are equally motivated to prioritize public social and environmental interests, and should be held to scrutiny of ‘moral performance.’<sup>56</sup> With these caveats in mind, this research seeks to determine if and how a Farmland Investment Trust (FLIT) could be designed that would not only pass this test of scrutiny, but effectively increase the adoption of conservation practices in agriculture in an equitable manner.

## Key findings: stakeholder attitudes and social impacts

In the evaluation of a farmland investment vehicle designed to protect the environment, it's crucial to consider the potential ramifications for the various stakeholder groups involved. The focus of this research centers on farmers and landowners, with a lens toward potential social impacts on rural communities and disenfranchised groups in particular.

*“With so many livelihoods and identities depending upon land, its incorporation into financial portfolios will have effects that reverberate through rural communities worldwide.”<sup>8</sup>*

– Dr. Madeleine Fairbairn, UC Santa Cruz

### Farmers

To understand farmer attitudes about conservation and farmland investment, a number of proxies were used in addition to direct interviews with farmers (see the [Methods](#) section for the list of proxies). Given the [Research Limitations](#), more systematic research should be conducted with a larger and more diverse sample of farmers to corroborate these findings. In the meantime, the following section should provide a helpful baseline understanding of some of the most salient issues concerning farmers. Specific responses to a FLIT model are incorporated here, along with views on farmland investment models more broadly.

#### Salient themes

##### Land ownership versus land access

When broaching the topic of farmland investment models in interviews, the first (and often immediate) response was: *who owns the land?* “As a representative from a farmer advocacy group said in an interview, *“there is so little money to be made farming with integrity that equity in the land is so important.”* Owning land is the ultimate goal for most farmers given the security it provides and opportunities it creates. As discussed above, the many challenges associated with obtaining land ownership are often insurmountable. Easements and deed restrictions can help make land more affordable,<sup>25</sup> but otherwise farmers struggle to compete for land that comes up for sale because they cannot match the price of the highest bidder or secure a loan in time.<sup>6</sup>

In certain circumstances, secure land tenure may be acceptable in lieu of land ownership, especially if farmers can invest in the property over the long term without the risk of being uprooted.<sup>27</sup> Interestingly, Iroquois Valley Farmland REIT provides a buyout option for farmers at the end of every lease (typically 7 years), but few farmers have elected to purchase the land. As an Iroquois Valley representative explained: “Our land access is designed to be indefinite and the farmers may not have the capital to secure traditional financing to buy the land. Many of them own their own land already and are using our lease as a way to expand their operations without having to put 25-50% down for a traditional mortgage on a \$1 million (plus) piece of land.”

The first thing to note here is that Iroquois Valley primarily works with mid-sized farms or millennials branching off from established family farms, so they already have a leg up in the way of land ownership and their preferences for renting should not be applied to other farmer demographics. However, the REIT also sells the land at market value in order to create value for shareholders, which will have appreciated over 7 years, partly due to ecosystem service improvements to the land. The resulting price is likely to remain out of reach for many farmers. This exemplifies the importance of farmers’ ability to build ‘sweat equity’ in the investment model that could count toward a buyout option to own the land.

## Conservation

When it comes to conservation, producers appear to value soil health across the board; as one producer said, “We can’t afford to abuse the soil.” However, they consistently point to annual leases and operating loans that reward yield as major disincentives to experimentation with conservation practices or farm transitions that require long-term investments. When switching from conventional to regenerative—or even organic farming—owning land allows farmers to bear the costs of transitioning over a longer time horizon. Otherwise, leases need to be at least 5 to 7 years.

Many producers have voiced the need for more technical assistance and consistent funding to help reduce risks and cover costs,<sup>36</sup> as well as frustration that most government funding for conservation tends to go to producers who already own land.<sup>25</sup> Farmers largely advocate for voluntary government programs with outcome-based incentives and discourage increases in regulations as a means for conservation.<sup>36,41</sup> However, for an investment model, an entirely outcomes-based approach to measuring ecosystem service benefits is risky because it leaves farmers vulnerable to extreme weather events or other unforeseen circumstances, so a practices-based approach is preferred.\*

Underlying many of the concerns voiced by producers is the reality that changes made to farming practices have to make sense financially. Narrow profit margins don’t allow for much experimentation or room for error, so even when farmers might want to make changes to their farm, they are often limited by financial constraints.

### *Implications for Farmland Investment*

In response to the concept of a farmland investment model, farmers brought up the following issues, in approximate order of priority (which is partly based on the frequency with which they were voiced).

**Affordability:** First and foremost, producers need to understand how the financial benefits of engaging with an investor model compare to other financing options available that lower barriers to land access, such as loans from USDA or state-level programs or from a local bank. In 2016, Land for Good held a small focus group with farmers in the Northeast to understand their attitudes toward a handful of specific farmland investment models. Findings from the focus group suggest that “farmers typically find above-market rental rates an acceptable trade-off for the added security of tenure, particularly if the farmer has an option to purchase or right of first refusal.” These attitudes were in response to investment models that base rent on the land acquisition cost instead market rental rates, but that include ‘triple net’ leases where farmers also pay property taxes, insurance, and maintenance costs.<sup>57</sup>

As exemplified in an interview with a longtime producer who rents a portion of his land, farmers also need to know how the expected return for investors would compare to the current expectations of NOLs: “*The FLIT seems like a beginning farmer gig. It wouldn’t be something I’d be interested in, but I’m already leasing from absentee landowners that are looking for a 2-4% return on their money and I can give that.*”

**Sharing risks and benefits:** Investors must share production risks with farmers, and farmers need to receive direct benefits from their stewardship of the land and improvement of ecosystem services. A

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\*For a more detailed comparison of the tradeoffs between outcomes-based and practices-based measurements, refer to: *Investing in Soil Health via Regenerative Farmland Investment Trusts: A Policy Analysis and Pilot Recommendations*, by Molly McGregor

crop share model is ideal, particularly if farmers are required to implement certain conservation practices.

**Overly prescriptive stewardship standards:** Producers value soil health, but need to know how improvements in soil health and other ecosystem services would be quantified. There is a general resistance to investors dictating farming practices and concern that conservation practices stipulated in leases would be overly prescriptive. Autonomy over farming practices is highly valued; in fact, despite the challenges that can surface in tenant agreements with NOLs, some farmers prefer that arrangement because they feel they have more freedom to manage their farm as they wish.<sup>7</sup>

**Lack of trust & resistance to outside ownership:** Distrust of investors and their motives leads to a general resistance to ‘outsiders’ coming to farming communities and buying land. Some are concerned that investment models will increase the cost of land or may favor non-local renters, ultimately having negative impacts on the livelihoods of community members. The term ‘investors’ alone can therefore carry negative connotations. The Land for Good focus group highlighted the importance of developing relationships and having in-person conversations between farmers and investors, which helped to appease farmer concerns and increase their willingness to consider the investment models.

**Time:** When land comes up for sale, interested buyers have to act fast. One farmer interviewed explained that he wanted to work with Iroquois Valley but the process was going to be too slow and the pricing unknown—he needed to make an offer on the desired land near his farm right away. Farmland investment models vary in how quickly they are able to acquire land, partly depending on whether they start by selecting land or working with farmers. Models that develop partnerships with farmers are ideal for trust-building, but are less likely to suit the needs of a farmer trying to close a deal on land in a short timeline.

## Landowners

A decent amount of research has been conducted on landowners, and NOLs in particular, with a focus on their knowledge and adoption of conservation practices on their land. Considering that about one-third of all farmland is owned by NOLS, this stakeholder group has important implications for farmland investment as well as environmental conservation efforts more broadly. Key areas of interest include NOLs’ commitment to conservation as well as their intentions around estate planning and land transfer. Given this project’s [Research Limitations](#), no NOLs were directly interviewed, although 5 interviews were conducted with landowners who actively operate their farms. The following findings are drawn from existing academic research, interviews with academic scholars and industry experts that focus their work on NOLs and farmland ownership, and a survey of NOLs conducted by the American Farmland Trust (AFT) in 2020 across 13 states: Arkansas, California, Illinois, Indiana, Iowa, Kansas, New York, North Carolina, Ohio, Pennsylvania, Texas, Virginia, and Washington.

## Conservation

Based on the AFT survey results, NOLs report that when making land management decisions, they care most about keeping their land in farming and protecting it for future generations of their families—seconded by the preservation of soil quality. NOLs expressed an interest in supporting their tenants to adopt conservation practices on their land and may be willing to help in various ways.<sup>58</sup> However, NOLs reported that the two biggest barriers preventing them from implementing conservation practices are 1) a weak farm economy, and 2) too many requirements or restrictions associated with government conservation programs.

NOLs typically have little involvement in land management decisions; it's estimated that landlords alone decide to participate in government conservation programs on only 7% of rented land (although this number increases to 30% for joint decisions between tenants and NOLs).<sup>13</sup> NOLs tend to place a high level of trust in their tenant's decisions;<sup>52</sup> NOLs mostly rely on tenants, neighbors, and friends for information, while tenants tend to get more resources from federal government employees or County Extension offices.<sup>35,58</sup> Currently, there are essentially no state or federal programs that provide resources directly targeted to NOLs.<sup>32,52</sup>

Research has highlighted a considerable lack of knowledge among NOLs about conservation practices, especially among women NOLs and those with less experience in agriculture. Survey respondents expressed some interest in receiving information and technical assistance for various conservation practices. The most interest was expressed in receiving information on soil fertility improvement (average 42% across the 13 states), while there was the least interest in information on conservation tillage (average of 29%).<sup>58</sup> Given a list of interventions to choose from, only 14% of NOLs on average across all states indicated interest in "working with a private business that specializes in providing conservation services targeted to NOLs." Although it's not entirely clear what type of business this refers to, it was the only option that involved the private sector, and it ranked lower than having access to education materials and leasing tools that help account for costs, benefits, and timelines of implementing conservation practices.

50% or more of NOL respondents in over half the states surveyed said they would be willing to include a lease provision that requires operators to implement practices to conserve soil health. It should also be noted, however, that in 7 of the 13 states, over 60% of leases are verbal agreements, which would make implementation more challenging. The AFT study did not include survey questions to gauge interest in financial incentives for adopting conservation practices beyond existing government programs. However, a survey conducted in Iowa showed that nearly half of Iowa landowners would be willing to increase conservation practices on more acreage if they were to receive a conservation-related tax credit or deduction, and 36% would be willing to do so if there was a tax-free cost sharing option.<sup>33</sup> One-third of Iowa landowners reported being open to paying for part of the planting costs for cover crops, (which is substantial considering cover crops are currently used on only 4% of farmland in the state).

#### *Potential Intention-Action Gap*

Although the AFT survey finds that NOLs care more about conservation than has been previously thought, its findings come with the caveat that there is not much evidence of their supposed willingness actually playing out in practice. There is certainly a knowledge gap that needs to be filled with regard to conservation, but there may also be an intention-action gap, meaning landowners' declared intentions may not entirely align with their actual behavior. Anecdotally, a number of farmers and experts interviewed claim that landowners typically prioritize profit when deciding to whom, under what model, and at what price they rent or sell their land. Additionally, the least limiting factor reported across all states was 'worrying about disapproval from neighbors,' which stands in contrast to many anecdotal (as well as some documented) findings about the influence of social norms and perceptions among farming communities.<sup>3,35</sup> These behaviors likely depend on how far away NOLs live from their land, but further research should be conducted to try to disentangle landowners' actions from their stated motivation to invest in conservation.

### *Role of Gender*

Preliminary research indicates that the role of gender in tenant-landowner dynamics has historically been overlooked. 25% of rented farmland is owned by women<sup>58</sup> and in some big agriculture states that number is far greater. For example, in Iowa, nearly 50% of farmland is owned by women.<sup>33</sup>

The AFT survey indicates a comparable level of interest from women NOLs to their male counterparts when it comes to supporting renters to implement conservation practices, though men are more likely to have conservation practices included in their lease agreements. Despite women landowners' favorable views on conservation, an increase of actual implementation of conservation practices on their land has not been documented in practice.<sup>33</sup> This may be because women landowners are less likely to have knowledge or experience with farming and therefore more likely to rely on their tenants to make land management decisions.

One exception is that women NOLs are more likely to have crop share agreements than male NOLs. A possible explanation for this pattern is that women may be less likely to alter the lease agreements they inherited, while men are more likely to switch to a cash rent model. Additionally, anecdotal evidence suggests that concerns about community optics and social pressures make women landowners more reticent to tell tenants how to manage the land. Especially given the number of women landowners and NOLs, farmland conservation efforts should include targeted engagement with this stakeholder subgroup.

### *Succession planning*

Understanding landowners' intentions around succession planning has significant ramifications for farmland investing as well as the agriculture sector more broadly. One of the basic assumptions of a farmland investment model that plans to purchase land, is that current landowners will be interested and willing to sell their properties. Across all 13 states in the survey, NOLs reported that the next owner of their land is most likely to be a relative who will rent it out (seconded by a relative who will farm it themselves). On average across the states, 12% of NOLs plan to put their land in a trust, while 10% would be willing to sell their land to the highest bidder (when split by gender, 13% of men would do this versus 9% of women).

Inheriting landowners, in particular, tend to hold on to their land. This is partly for sentimental reasons (for nearly 30% of farmland in Iowa, landowners give the primary reason for ownership as "family or sentimental reasons").<sup>33</sup> Some landowners may feel the need to hold on to their land as their most (or only) valuable asset, especially in the absence of a stronger safety net in the United States. Universal Health Care, for example, might allow retiring farmers to be open to more options with respect to succession planning because they wouldn't have to depend on their land as their safety net.

But there are additional financial reasons that likely play a bigger role. Capital gains taxes provide a significant disincentive for landowners to transfer their land during their lifetime.<sup>13</sup> The federal capital gains tax rate of 20% can be substantial for land that has appreciated in value over time. Meanwhile, land is exempt from federal estate tax if it is transferred through a will when the landowner dies (within current exclusion levels).<sup>27</sup> In order for landowners to consider selling their land during their lifetime, they will certainly be looking for the highest possible price.

Notably, conservation is often not a significant part of farmland succession-planning or the formulation of trusts and estate plans. Reasons for this may include lack of knowledge or interest from landowners, especially among NOLs who may not be directly engaged with their land. As explained in an interview

with an attorney who specializes in farmland succession planning, landowners often see land stewardship and land transfer as separate issues and family inheritance tends to take precedence during the succession planning process. Landowners also don't appreciate being told what to do with their land, so it's challenging to broach the topic of conservation in a way that landowners will be receptive to if it's not already something they want to incorporate.

### *Implications for Farmland Investment*

In summary, landowners—and particularly NOLs—have expressed the following:

- The majority of landowners report that land management decisions are primarily driven by the desire to protect their land for farming and for future generations of their families, seconded by the goal of preserving soil quality.
- Despite expressed willingness to support more conservation practices on their land, there may be a discrepancy between landowner's intentions and their actual behaviors.
- Especially given the tax incentives for holding on to land, it's unlikely landowners will consider selling their land at anything below the highest use value of the land.
- Conservation is currently not a significant factor in succession planning and is unlikely to motivate most landowners to sell or donate their land.

### **Why framing is crucial for stakeholder engagement**

Careful framing is critical for strategic communications of any kind, but its importance for outreach efforts in the U.S. agriculture sector cannot be understated. One reason for this is the incredible heterogeneity of farms and farmers. The history of land dispossession and discrimination in U.S. agriculture adds another complex layer to the narrative. Another reason is the politicization of climate change within the context of highly polarized red and blue states. Yet another is the pride farmers take in their farms, connected to their nostalgic (sometimes stubborn) attachment to the way things have been done for generations.

As was suggested in multiple interviews, "You have to meet farmers where they're at." That means recognizing that they are the ultimate stewards of their own land, which they know best. There is an important difference between speaking *to* farmers and speaking *with* farmers; the latter approach involves listening to how they talk about conservation and adopting their terminology. This will allow for recognition of and appreciation for the conservation practices they are already implementing.

Terminology carries the weight of history and perspective that can put an end to conversations about conservation before they can even begin. As described earlier in this report, the recent focus on '[Regenerative Agriculture](#)' in mainstream dialogues is largely guilty of cultural appropriation of BIPOC land stewardship, particularly without respectful attribution to the Indigenous origins of the concept. Meanwhile, the same term may be rejected in parts of the Midwest (particularly from commodity crop growers in the corn belt region) for a very different reason—because it's seen as a threat to their way of farming that's being pushed by the political left. Representatives from the National Corn Growers Association explained that their members were just coming around to the term 'sustainable.' They said that 'climate-smart' is also still pretty new, and it meets more resistance from older farmers who may hold skeptical views on climate change. Meanwhile, members may be more open to talking about 'resilient' agriculture, which resonates with farmers' lived experience in the fields.

Anecdotal evidence from this project's interviews suggests that certain terms are used relatively universally across diverse representatives of various farming communities. 'Soil health' and 'land

stewardship’ both appear to be valued and used across the spectrum, from Indigenous tribes and Black farmers to conventional farmers in the Midwest. The concept of ‘working lands easements’ also garnered interest from diverse stakeholders, including a nonprofit that supports Indigenous agriculture as well as the Farm Bureau.<sup>59</sup>

While identifying widely accepted terms may be useful for communications on a national scale, tailored messaging is crucial for more targeted engagement with different types of farmers. It may also be more effective to highlight the ways in which conservation is connected to practical elements of farming. Instead of focusing on science-based metrics around carbon sequestration, for example, metrics that motivate farmers on a daily basis include, water savings, lower fertilization needs, better pest management, better yield, lower production costs, and easier regulatory compliance for other programs.<sup>36</sup>

Including a diverse array of farmers in dialogues about conservation in agriculture illuminates the need for more variation in the ways that we approach the issue. As far as engaging with rural populations, studies suggest that rural voters value natural climate solutions, but are resistant to government oversight and regulation.<sup>60</sup> The messenger also very much matters. Local messengers are most trusted, so building relationships with farmers, ranchers, extension services, and community members is key for effective information sharing. In response the concept of a FLIT, multiple interviewees based in the Midwest stressed the importance of community engagement when they asked, “Who will be at the community picnic?” Essentially, who represents the FLIT? Local ambassadors can play a significant role in helping to garner community support, especially around ideas that may take a shift in norms or perceptions.

This makes the case for more participatory, community-based research that builds community engagement and peer-to-peer learning.<sup>17</sup> But the need for authentic community buy-in also makes the goal of scalability more challenging for a farmland investment model, which would require customized engagement with different populations that will vary by region, type of farmer, and political leaning.

### Potential negative social impacts

Existing research points to a number of concerns about the equity implications of farmland investment and the potential negative externalities that could ensue. This section highlights recurring themes from research that also came up in interviews with academic scholars, government representatives, and advocacy organizations with a focus on farmers, rural communities, and socially disadvantaged groups.

#### *Exacerbating inequities in land ownership*

Concentrating land ownership in the hands of investors is likely to exacerbate growing inequities in land ownership that already exist.<sup>8</sup> Since land ownership is wealth-generating, this has implications for growing wealth gaps and income inequality in general.<sup>61</sup> From 2012 to 2014, white people owned 98% and operated 94% of all farmland, and generated 98% of all farm-related income from land ownership.<sup>12</sup> This snapshot is representative of larger historical trends in U.S. agriculture, which were exacerbated through the dispossession of land from BIPOC farmers—from 1910 to 2007 Black farmers lost 80% of their land.<sup>23</sup>

Particularly given this history, land ownership is generally considered a requirement for ‘land justice.’ One BIPOC representative of a nonprofit that supports small scale sustainable farming cautioned against a farmland investment model that “pitches to these farmers that they should be tenants for the rest of

their lives when they've already had land stolen from them." A number of other interviewees explained that the only way for a model to be equitable in their view is for there to be an affordable buyout option (or right of first refusal) for farmers at the end of leases, or a way for farmers to build equity from day one.

Another equity consideration relates to the scalability of a farmland investment model. As Madeleine Fairbairn argues: "The financial sector's growing interest in agriculture is not scale neutral. By its very nature, it will tend to push agriculture toward larger-scale and more capital-intensive production" (p. 125).<sup>8</sup> If the primary goal is to improve the soil and protect the environment on as many acres as possible, then it would be logical to target larger producers. But with this strategy, producers with secure land tenure who already have greater access to conservation programs and other forms of support would likely benefit the most from the investment model. Additionally, some investment models may offer the opportunity for current landowners to build their land's value by putting a portion of their land equity into the investment vehicle. Given the data on current ownership of farmland, this equity building model will likely disproportionately benefit those who are already operating from an advantageous position.

Even for investment models with good intentions, sufficient returns for investors are still required for a model to scale.<sup>8</sup> When it comes to farmland, returns must be accomplished through increased land value and/or scale (via consolidation of ownership), which both can have negative consequences. Farmers—especially small producers and disadvantaged groups—may be further priced out of the land market, exacerbating existing inequities in land ownership.<sup>62</sup> Perverse environmental outcomes may also ensue if higher land values pressure nearby producers to prioritize valuable cash crops in order to stay competitive instead of rotating cover crops and other conservation techniques.

### *Extracting wealth and resources from farming communities*

Farming communities across the U.S. are in need of capital investment to support their development. Previous examples of institutional investment in farmland, however, demonstrate the tendency for investors to benefit at the expense of rural communities.<sup>62</sup> Research conducted on the impact of anticorporate farming laws has shown that counties dependent on agriculture in states that have those restrictions are more likely to score higher on measures of community well-being than counties in states without the laws in place.<sup>55</sup> The study determined that the success of anticorporate farming laws did not stem from limitations on large scale farming, which is not inherently negative for rural communities. Instead, the positive outcomes were traced to the benefits that come with less vertical integration of food corporations. This exemplifies the importance of preserving local control over supply chains, including food processing and coordination with manufacturing.

Research has also shown that investor ownership models can lead to more extractive behavior.<sup>54</sup> The most problematic examples resemble "a real estate deal masquerading as an agricultural project" (p.12).<sup>63</sup> For example, the Harvard University endowment purchased 8,000 acres of land in California's Cuyama Valley to plant an irrigated vineyard despite concerns of groundwater depletion and drought. In effect, they "turned a declining water table into a source of scarcity rents that will be capitalized into the value of their property" (p. 13) to the detriment of surrounding communities.

This theme also surfaced in an interview with a larger producer that owns the majority of his land. He explained that when some investors bought land adjacent to his farm, he offered to manage the land so that he could protect the water assets—something many small farmers lacking secure land tenure may not have the capacity to do. Control over land and its resources can empower and uplift rural

communities; property rights serve an important form of protection as they are “wedded to other rights—like the right to have clean air and water on one’s own property”(p. 122).<sup>64</sup>

### *Power imbalance between stakeholders*

Many interviewees expressed concern that even if the bylaws of a corporate charter are designed to prioritize social and environmental benefits, investor ownership models inherently favor the interests of investors and benefit from added protections through limited liability.<sup>64</sup> Building in more meaningful protections for farmers and their communities entails a shift in the power balance so they are not only relying on the goodwill of investors.

For farmland investment models that specifically encourage conservation practices, additional concerns arise around the stipulation of certain stewardship standards. A number of interviewees disapproved of dictating land management practices for fear of infringing on farmer autonomy and agency over their farming operations. The challenges associated with standardizations or certifications that require certain stewardship practices is not unique to farmland investment, as some producers struggle with the rigidity of current certifications such as Organic.<sup>44</sup> To the extent possible, farmers should be involved in the design and implementation of standards to ensure that they support appropriate, flexible practices and don’t create undue burdens for producers.

Farmland investment models do not easily lend themselves toward efforts to democratize the food system, as they require—at least initially—further concentration of land ownership under a corporate structure. From a social equity standpoint, acceptable models must lower barriers to secure land access and preferably ownership, particularly for socially disadvantaged groups. The question then becomes, can a (very well designed) farmland investment model be a vehicle for not only conservation, but also *land sovereignty*? Some creativity may be required to conceptualize this, as it goes against typical calls for land reform or redistribution, which generally resist further concentration of land ownership and call on social movements or the state to interfere.<sup>65</sup> But considering the many barriers discussed in this report that stem directly from government programs, it’s worth assessing the potential benefits private capital can bring.

*“Land sovereignty is the right of working peoples to have effective access to, use of, and control over land and the benefits of its use and occupation, where land is understood as resource, territory, and landscape.”<sup>64</sup> – Dr. Saturnino M. Borras & Dr. Jennifer C. Franco*

### *Potential positive social impacts*

The documented negative impacts of the financialization of farmland to date can largely be attributed to investment models that were never designed to do anything but generate profits for investors. But what if an investment model were designed to reinvest in land, labor, and relevant communities?

First we must differentiate *social investment* in farmland from purely financial investment in farmland.<sup>62</sup> Social investment includes “the investment of labour, ingenuity, and social commitment made by those who work the land for the purpose of realizing future security and social wellbeing and political goals as well as economic development” (p. 153). If the theory of social investment can truly be put to practice, the challenge becomes whether and how the impacts can be measured.

Very little research has been done on the few existing investment models designed to benefit farmers and farmland. A detailed comparison of five such models was conducted by Land For Good in 2016.<sup>57</sup>

Although most of these models are not scalable in a substantial way, all five continue their work today, partnering with farmers in various ways to increase access to land and support sustainable farming methods.

Farmland LP and Iroquois Valley Farmland REIT provide particularly interesting case studies as their models continue to expand (see [Leveraging private capital to protect farmland](#) for more details on each). They differ in a number of ways that have implications for evaluating their social impact. Farmland LP, (which is a more profitable model), selects land that is most suitable for conversion to organic farming and then identifies farmers, providing management and financial support through the transition to organic. It does not offer a buyout option or avenues for farmers to build equity. Meanwhile, Iroquois Valley starts with farmers who identify land they would like to farm. They take a very hands-off approach to land management and allow farmers to run their own businesses as they see fit. Unlike Farmland LP, they offer long-term leases with a buyout option, but most farmers do not elect to purchase the land.

Both models provide benefits to the farmers they work with, especially by covering the costs of infrastructure and capital improvements. However, neither is particularly well-suited to reach small, new, and/or BIPOC farmers who are less established (for example most of Iroquois Valley's farmers already own some land). Further research should be conducted to understand the positive impacts these models have on farmers and their communities, as well as any limitations or unintended consequences.

#### *Case Study: Leveraging Private Capital to Democratize Land Ownership*

Other case studies are difficult to come by, but there is an example of private capital successfully used to transfer land into collective ownership by a community of immigrant farmers. In 2013, an impact investor purchased land in Minnesota and offered an 8-year lease with a buy-out option to the Hmong American Farmers Association (HAFA).<sup>65</sup> This agreement allowed HAFA members' sweat equity to work toward their eventual ownership of the land, which they now manage as a cooperatively-owned agricultural land trust. The benefits are varied and far-reaching. Farmers' average income per acre increased 120% over 6 years; they have diversified their crops and revenue streams; planted cover crops and launched a study on water and soil health; financed larger equipment purchases; and secured local procurement contracts. Their model has had positive ripple effects beyond HAFA members into their local communities; for example, Head Start in St. Paul now sources nearly 25% of its produce from HAFA farmers and brings children on field trips to their farms to learn about healthy eating.

The HAFA example demonstrates how social investment in farmland can provide an alternative route for disadvantaged BIPOC farmers to gain access to land sovereignty.<sup>65</sup> However, it's unclear how much the investor who purchased the land on behalf of HAFA benefited from this investment. Investor return is an important factor when assessing the scalability of farmland investment models, which is explored further in the next section. Scalability matters because we have a limited timeframe to preserve the earth's finite resources and change U.S agriculture practices as part of larger efforts to slow global warming.

## Analysis of farmland investment as a vehicle for conservation

### Concluding Analysis

Here we circle back to the overarching goal and research questions for this project: *Can a private investment vehicle that owns and manages farmland catalyze a shift resulting in enhanced soil health on 25% of cropland (100 million acres) through regenerative farming practices by 2030? Is there a private investment model that can be designed to accomplish this in an equitable manner?*

Soil health, and the associated suite of conservation (or ‘regenerative’) practices, comprise an interconnected ecosystem. Humans are an important part of that ecosystem, and therefore regenerative agriculture cannot be detached from the social and political contexts in which it exists.<sup>24</sup> Thus, a farmland investment model (or any other effort) that aims to support regenerative agriculture, must also advance social equity.

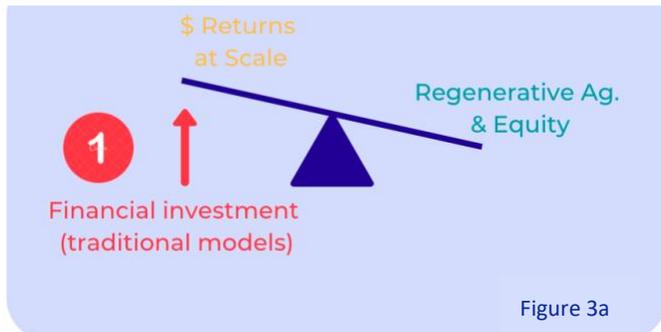
Therefore, the conclusion of this research is that an effective investment model would be difficult to scale in a way that sufficiently protects the interests of farmers and their communities. The tool selected to catalyze change in this equation—private investment—is inherently counter-productive to some of the social equity aspects of the project’s desired outcomes, and therefore requires considerable efforts to reshape the tool itself. While it may be possible design an equitable farmland investment model that encourages the adoption of conservation practices, it’s unlikely to do so at the desired scale.

There are simply too many misaligned incentives in the current system that create barriers to a regenerative agriculture. To revisit a brief overview of some of the [Key barriers to wider adoption of conservation practices in agriculture](#), the following list highlights some of the most important issues discussed throughout this report:

- Access to secure land tenure presents the largest barrier, yet taking on debt is one of the few avenues to land access and ownership for many farmers, especially new and BIPOC farmers.
- Nearly 40% of all farmland is leased, and of that, 80% is controlled by non-operator landlords (NOLs) who lack incentives to invest in the long-term health of their land.
- Capital gains taxes make it unlikely for substantial land transfer to occur outside of current land-owning families.
- Many farmers face barriers to accessing and benefiting from existing government conservation programs.
- Many farmers rely on government programs that disincentivize conservation practices, such as subsidized crop insurance and commodity price support programs.

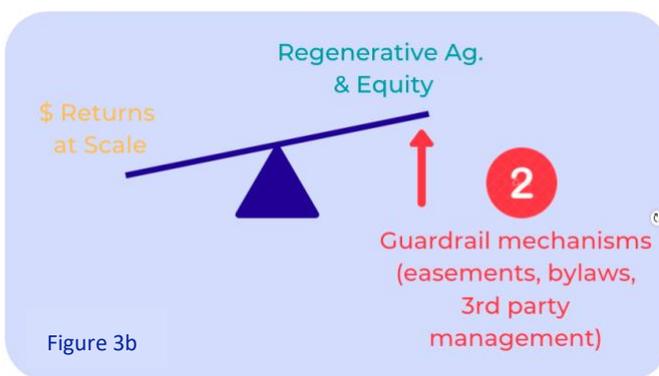
It is within this context that we explore the possibility of a successful farmland investment model, which would provide both social and environmental outcomes, as well as sufficient investor returns.

**Figure 3: Visualizing limitations of scalability**

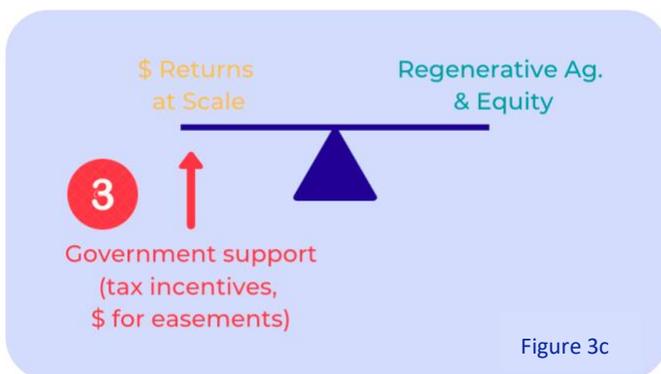


Even well-intentioned impact investing inherently seeks a return on investment, which is required for a model to scale. Scale is most easily achieved through the dominant political, economic, and cultural systems (represented by the blue base in Figure 3). Thus, in the current system, investing in scalable efforts generally undermines social equity and regenerative agriculture, which requires significant customization and localization.

Guardrail mechanisms could potentially be built into an investment model to ensure profit-seeking does not sway the fund's agenda away from public environmental and social benefits. Such mechanisms could include a combination of B Corp certification, easements, parameters written into the bylaws, government tax incentives, and possibly third-party management or part ownership of a fund. However, these mechanisms will reduce the profitability—and therefore scalability—of the model (Figure 3b).



Government support of those mechanisms could balance out the system, allowing the model to attract more investors and function at a larger scale, while reducing social inequities and encouraging regenerative practices. However, this investment model is limited by the structure of the current system, which includes the many barriers discussed above (Figure 3c). Regenerative agriculture can be practiced widely across more acreage, but it will be difficult to



accomplish this at scale without changing the socio-economic and political underpinnings of the structure itself.

Ultimately, farmland investment is not the most efficient tool for catalyzing a shift toward regenerative agriculture on a large scale. It could be likened to driving a nail into floorboards with a screwdriver; it can be done, but not without turning the tool upside-down and applying a lot of effort and ingenuity. The more efficient approach would simply be to grab a hammer instead—or policy reform, which directly addresses the many misaligned incentives embedded throughout the current system.

However, while policy reform may be the most direct approach, it is usually not the fastest. We will therefore explore the idea of a pilot farmland investment trust (FLIT). Since we are entering some

uncharted territory in the way of farmland investment, further research should be conducted before implementing a new investment model, and a pilot project would offer a way to pressure test some of the ideas offered below on a smaller scale.

### Recommendations for a FLIT pilot

Given the various [Potential negative social impacts](#) of farmland investment discussed above, a pilot should be conducted before pursuing a particular model on a larger scale. In addition to important due diligence, a pilot would create unique opportunities for further research. A successful pilot could also use the power of example to suggest more effective uses of government funding (e.g. purchasing easements in partnership with private investment), which could support future policy reform efforts. Farmers and relevant communities should be involved in the design and evaluation of a pilot, but some preliminary recommendations for the design include:

#### *Entity structures to consider*

The FLIT was originally imagined as a REIT, which in theory (and under certain circumstances) can be a vehicle for democratizing land ownership. However, REITs allow investors to avoid the high upfront costs of buying land, creating a “detour around land’s illiquidity”(p.83)<sup>8</sup> and giving a significant advantage to investors over farmers who are trying to buy land through traditional methods. REITs are also subject to the 1-Share, 1-Vote SEC securities rule, which would prohibit the extent to which farmers can be involved in decision-making if they do not own majority shares. REITs have a number of structural requirements that would limit the flexibility of the model to incorporate mechanisms like conservation easements or allowing farmers to build sweat equity. In conclusion, a REIT is not a viable entity structure for an equitably designed FLIT.

In comparison, there are a few advantages to a private equity model, which allows for more flexibility in the entity design. Agriculture conservation easements that restrict the use of land or require it to be used for agriculture (‘affirmative easements’) would play an important role in this model by reducing land values, enabling farmers to gain equity more easily, and reducing pressure on neighboring land prices (though easements will also reduce the profitability of the model, and would likely require some form of government support). With a private equity model, farmers would also have greater ability to build equity through various avenues, including sweat equity and improved environmental outcomes on the land. Also, once investors receive the preferred return of a private equity fund, additional profits could be distributed to areas of the fund that are dedicated to farms and farmers.\*

The flexibility is critical because a *traditional* private equity model is not suitable for an equitable farmland investment trust, so guardrails would need to be put in place to steer the entity away from the traditional private equity goals of simply increasing the value of the land. For example, the entity should be restricted from purchasing a number of small farms and consolidating them into larger farms that might be sold to agribusiness companies. As a general rule, the entity would need to be designed so that if investors profit, farmers benefit as well. Effective accountability mechanisms would need to be integrated and becoming a Public Benefit Corporation with B Corp certification would be a place to start. Investors in a private equity model don’t have a say in the selection of its management (unlike a REIT), so it could also be managed by a nonprofit or some other third party.

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\*For a more thorough analysis of this private equity model, including more details about conservation easements, refer to: *Evaluating the Potential of Private Farmland Investment to Catalyze Regenerative Agriculture*, by Anna Larson.

There are number of nonprofit organizations working to democratize and redistribute land through cooperative ownership models. However, they must engage with current system to acquire land, which means none have enough capital to affect change on a significant scale. Interviews on this topic inspired the idea of making an existing nonprofit the manager or part (or perhaps majority) owner of a farmland private equity fund. The nonprofit would advise and guide the fund's operations, and investors would provide capital through the fund to purchase land. The nonprofit could potentially leverage its existing farmer network to partner with farmers and identify land to buy in a responsible manner. The goal would be to leverage private capital to accelerate the conservation of farmland, while building an accountability mechanism into the fund through the nonprofit's oversight, which could include a diverse array of farmers and community members who might be more inclined to work with an entity attached to an organization they know and trust.

Some very interesting partnerships could be formed, especially if a third-party owner or manager could include Tribal Colleges or Historically Black Colleges and Universities. Additional research should be conducted to explore the various options, especially to understand the legal implications, but initial interest expressed from nonprofits interviewed suggest that it's an idea worth investigating further.

### *FLIT design elements\**

There are many aspects of a FLIT design to be considered in addition to the entity structure discussed above. Those listed below focus on design elements with the greatest impact on the stakeholders assessed throughout my research for this project. However, these suggestions should be corroborated by farmers where possible, and it would be especially helpful to incorporate feedback from farmers who have engaged with existing farmland investment models.

- **Start with the farmer, then find the land.** The land selection process should be farmer centric as opposed to speculative. Giving farmers a leadership role in the selection of land should help ensure positive outcomes for farmers and their communities.
- **Focus on farmers without land equity.** By targeting farmers who currently do not own land, the model increases its potential to lower barriers to land access and land ownership, particularly for those who have the most obstacles to overcome in the current system. This group will inherently include some beginning farmers, as well as the many tenant farmers who have rented land for years with only a dream of owning land themselves. From a business standpoint, having a mix that includes more experienced farmers will also help to reduce the risk of exclusively working with beginning farmers. There may also be opportunities for mentorship relationships to be developed within the farmer network connected through the FLIT.
- **Focus on NOLs, especially around retirement age.** From a social equity standpoint, this is the most appropriate group to target. In terms of feasibility, challenges may be confronted when trying to acquire land from this group due to a potential lack of interest in conservation and the tax disadvantages of transferring land within one's lifetime. However, there sheer numbers of NOLs around retirement age present an advantage for this approach.
- **Prioritize a crop share model.** Ensure investors are not insulated from the risks that farmers are exposed to in the fields. A flexible, output-based cash rent model would also work, in which farmers pay a base rent with additional variable payments that depend on their revenue. A fixed cash rent model is not advised.

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\*For a more specific recommendations for a pilot (as well as a more detailed comparison of the REIT and private equity model), refer to: *Investing in Soil Health via Regenerative Farmland Investment Trusts: A Policy Analysis and Pilot Recommendations*, by Molly McGregor

- **Use a flexible, practices-based framework for measuring ecosystem service outcomes that's connected to a set of ecological principles.** The science behind the measurement of environmental outcomes such as soil health continues to evolve, and overly prescriptive measures should be avoided. A consistent yet flexible framework is ideal, which identifies a set of ecological principles as goals (e.g. keeping roots in the ground) and allows farmers to use a number of different practices to achieve those goals. Flexibility is required for the framework to allow farmers to adapt practices as needed in different regions for various crops. Measurements are therefore mainly practice-based with a subset of outcome-based measurements and monitoring mechanisms that assess the extent to which the observed outcomes align with the expected results of the practices being implemented.\* Another metric to consider incorporating would be a farmer's profitability as an indicator of a sustainable model that will benefit farmers in the long term.

### *Questions to explore through a pilot*

There are many questions to be answered through a pilot, but the following have a focus on potential social impacts of the FLIT.

- How do NOLs respond to the opportunity to sell or donate land to a FLIT?
- How do farmers without land equity respond to the opportunity to engage with a FLIT? What are their preferred lease terms?
- How can farmers be involved in the development of a FLIT?
- How do farmers benefit from engaging with a FLIT in the long term?
- How do farmers fare financially through a FLIT in comparison to their returns under the current subsidized system?
- What are the challenges farmers face when engaged with a FLIT?
- How might a FLIT influence the broader community?
- How might the presence of a FLIT influence the prices of nearby land?

### **Additional considerations for equitable farmland investment**

There are a few existing frameworks with guiding principles for responsible investment as it relates to farmland. The following section highlights their limitations and provides additional suggestions, which may be applicable to farmland investment models beyond the FLIT specifically.

### *ESG limitations*

Investment companies have come under increasing pressure to report on Environmental, Social, and Governance (ESG) criteria. In recognition that farmland investment requires careful consideration of ESG issues, The World Bank published [Principles for Responsible Agricultural Investment](#) in 2010, which has 24 components ranging from appropriate business models and public transparency to respecting land rights and community engagement strategies. In 2015, the United Nations-supported Principles for Responsible Investment (UNPRI) developed a simplified version with five [Principles for Responsible Investment in Farmland](#), which is more commonly referred to in the U.S. Notably, the broader PRI initiative is "voluntary and aspirational" and signatories include farmland investment firms solely designed to diversify portfolios and produce returns for investors (and have certainly done worse). For example, one of the signatories is TIAA, which as of 2017 had \$9.5 billion of its assets invested in

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\*For more detail on measuring and verification of ecosystem services, refer to: *Investing in Soil Health via Regenerative Farmland Investment Trusts: A Policy Analysis and Pilot Recommendations*, by Molly McGregor

farmland around the world and is responsible for illegal land grabbing and deforestation in places like Brazil, with devastating impacts on biodiversity and indigenous communities.<sup>8</sup>

There is concern that the limitations and lack of accountability with these voluntary frameworks allow companies to ‘check the ESG box’ and continue conducting their businesses as they wish (also referred to as ‘greenwashing’). Critics also suggest that these frameworks imply that the issues they aim to address are “not a land problem but an investment problem, and so more large-scale ‘investment’ is considered the solution” (p. 3).<sup>65</sup> But land itself is of course central to farmland investment, and it’s inextricably tied to many social factors that these frameworks tend to ignore. The UNPRI guidelines include a principle on labour and human rights, but there is no mention of land security or community development or well-being.

For an alternative route that has a bit more teeth, companies like Farmland, LP and Iroquois Valley are both certified B Corps, which legally bind them to account for their business’s social and environmental impacts. This certainly raises the level of commitment to ESG issues. However, ESG ratings themselves require a closer analysis.

#### *Case Study: Breaking down Farmland LP’s ESG rating*

Farmland LP’s 2021 bond offering ranked #1 in ESG ratings among global firms, receiving a score of 82 out of 100 from HIP Investor, Inc., which licenses ESG ratings.<sup>66</sup> HIP’s rating system is based on seven pillars: products & services, earth, trust, management practices, health, wealth, and equality. The last four largely refer to a company’s internal structure and employees, such as healthcare benefits, profit-sharing, ‘egalitarian CEO-to-employee pay ratio,’ and DEI. Farmland LP’s lowest ratings were for Board diversity and ‘population served’—ironically, they lost points due to their regional model, in which 93% of their product value is sold in the U.S., specifically in the three states where they own land. This rating is ostensibly based on the need to ‘feed the world,’ instead of serving local communities. If these ratings included more of a focus on the health, wealth, and equality of the farmers and communities impacted by their business model, chances are the numbers would turn out quite differently.

#### *Parameters for mitigating negative social impacts*

Given the limitations of current accountability frameworks discussed above, this section provides additional parameters designed to mitigate potential negative social impacts of a farmland investment model. However, these parameters themselves should ideally be developed with and corroborated by relevant stakeholders (e.g. farmers and their communities).

- **Participatory design and decision-making:** Engaging with all stakeholders who would potentially be impacted by an investment model is critical for understanding their needs and concerns, as well as the broader socio-economic context in which the entity will exist.<sup>56</sup> Diverse stakeholders should be included in the design phase as well as on-going decision-making processes.
- **Equitable Entity Structure:** Important elements of entity structures to consider include ownership, management, and liability. Investors should be cognizant of these issues as they assess structural requirements of various models that may either restrict or enable the ability to build mechanisms into the corporate bylaws that ensure farmers have a voice.
  - *Ownership:* Do farmers have equity in the company or the opportunity to gain equity? Ideally, they should be able to build equity from the outset.

- *Management*: Is management separate from the ownership of the entity? Management can be used as an accountability mechanism, and offers an opportunity for groups with less financial power to have a voice in shaping operations.
- *Liability*: Corporate entities, such as Limited Liability Corporations (LLC) limit risks in ways that individuals cannot.<sup>64</sup> To ensure an entity does not take advantage of its limited liability, consider an added layer of accountability through a B Corp certification and/or management by a third party.
- **Defining and Sharing Risk**: Given that risk is a source of profit in the private sector, guidelines must be in place that prevent an investment model from aiming to derive profit from the far more tangible risks associated with agricultural production.<sup>63</sup> Investors also need to share in the risks of farming, which they can do by covering costs of equipment or infrastructure improvements as well as committing to crop share lease agreements. Provisions must also be made that protect farmers in situations where a farm fails due to unforeseen circumstances or they were to get injured (providing health insurance would be ideal). Simultaneously, there should be clear and fair guidelines around the management of noncompliance from farmers (e.g. if they do not pay rent or apply toxic chemicals on the land).
- **Prioritizing Values**: The general ethics and guiding principles of the entity should ideally reflect the value system of the people and communities impacted more so than the investors themselves.<sup>56</sup> From the outset, it's crucial to recognize a departure from the classic shareholder value model and to set clear expectations that the commitment to positive environmental and social outcomes outweighs the 'fiduciary duty' of providing investors with the highest rate of return, as the two goals may come into conflict. (Further research should be conducted to clarify the legal options here. An addition of government incentives for investors to participate in this type of investment model could also help to mitigate conflicting interests.)
- **Accountability**: Both internal and external accountability mechanisms are necessary to ensure the intended positive impacts of an investment model are actually playing out on the ground. Becoming a certified B Corp is a helpful first step, but by no means enough on its own. Social and environmental impact should be measured based on input not only from scientists, but also from farmers and their communities.<sup>56</sup>
- **Partner with farmers to achieve environmental goals**: Farmers should be offered enrollment opportunities to voluntarily engage with the investment model. Farmers should be respected as business partners and land stewards who bring significant value to the business. Partnering with farmers to achieve ecosystem service outcomes will help to support farmer autonomy (see more suggestions in the above section on FLIT design elements).
- **Land selection**: The selection of land has implications for surrounding communities and ecosystems, and should be explored in tandem with the engagement of relevant stakeholders. The land selection process should be farmer centric as opposed to speculative, so ideally farmers would play a leading role in the selection of land. There also must be restrictions against acquiring land through:
  - *Dispossession*: Land should only be acquired from willing sellers. Restrictions should ensure that land dispossession, particularly from BIPOC groups, is not exacerbated in any way.
  - *Destruction of ecosystems*: Land cannot be acquired through deforestation or the destruction of natural habitats. There must also be restrictions against acquiring land with scarce resources, such as water, or requirements included with such an acquisition to put conservation easements or other protections in place.

While by no means a guarantee, these parameters are designed to at least provide a starting point for thinking about how to design an equitable farmland investment model.

## Additional leverage points to consider

There are many other ways to support the increase of conservation practices in U.S. agriculture. Highlighted below are some of the most powerful leverage points identified by this research, particularly as they relate to the goals of a farmland investment model.

### Government Support

#### *Powerful tax incentives\**

- Provide tax incentives (possibly a capital gains tax exclusion) to lease or sell land to beginning and BIPOC farmers, and farmer cooperatives.<sup>13,25,26</sup>
- Incentivize farmland conservation by creating a federal capital gains tax exclusion for proceeds from the sale of agriculture conservation easements.<sup>27</sup>
- Provide tax incentives for crop share agreements or the implementation of other conservation practices on farmland.<sup>3,33</sup>
- Implement an estate tax exemption for farmland that has an agriculture deed restriction that keeps it in farming (if the land gets converted out of farming, it will be subject to estate tax).

*\* It may be more feasible to incorporate some of these in the Farm Bill than to change the tax code.*

#### *Priorities for policy reform*

- Reform crop insurance to incentivize a range of conservation practices; cap benefits to large producers; lower rates and expand access to small producers with diversified crops; remove the yield exclusion option; and expand the Whole Farm Protection program.<sup>17,37</sup>
- Refocus commodity checkoff programs and federal subsidies to incentivize the production of nutrient-dense foods for direct human consumption.
- Place a moratorium on agribusiness mergers and strengthen antitrust laws to prevent further consolidation of the agriculture sector.<sup>41</sup>
- Reform the Farm Credit System to redirect credit from multinational companies toward small and BIPOC producers.<sup>54</sup>
- Sanction a certification such as the Regenerative Organic Certification and provide support to ensure its accessible for small producers.

#### *Federal funding opportunities*

- Reward producers for existing conservation practices<sup>27</sup> but also penalize producers for emitting certain levels of pollution to properly account for the net environmental benefits.<sup>24</sup>
- Establish a federal land trust that purchases land from retiring farmers and reserves it for BIPOC farmers who can buy it at subsidized rates.<sup>23</sup>
  - Establish an Office for BIPOC farmers within the USDA, perhaps in tandem with the Justice for Black Farmers Act
- Increase support for UC Extension, especially to expand their technical assistance for implementation of regenerative farming.<sup>25,36</sup> This will require additional education for NRCS staff, many of whom are not well-equipped to support farmers who want to farm regeneratively.
  - Establish a Task Force for on-farm practices with regional or county-based branches.

## Private Capital

Private capital can contribute in important ways beyond the farmland investment models discussed.

- **Support research and science that validates efforts to support regenerative practices in agriculture.** Science shapes many influential factors such as the development of stewardship standards and economic modeling that influences land values.

### *Opportunity for investment: Using natural capitalization to quantify lost productivity*

There is an opportunity to account for soil health in calculations that determine land values; currently, they are generally determined by expected returns from crop production (based on a cash rent model), demand for development, interest rates, and structural characteristics of the property such as size, access, slope, and drainage.<sup>34</sup> Soil status is typically only recognized via productivity indexes that estimate yields (particularly for corn and grain yields across soil types). The Nature Conservancy suggests that including soil health as a factor in productivity indexes is not the most effective solution because the incremental improvements will have a very small effect on land value in relation to other factors like commodity prices and interest rates. Instead, landowners may be more responsive to calculations of the financial value of lost productivity from depleted soils over time, and possibly the associated costs of additional input needs (e.g. fertilizer). As more data is gathered on the cost savings from reduced inputs under a regenerative farming model, this approach could provide a compelling financial argument for landowners to invest in soil health.

This technique comes with a number of caveats. Motivating land stewardship through land values may be a strong incentive for landowners, but it could also increase barriers to land access (especially of quality land) for farmers. There can also be negative consequences from attaching monetary value to natural resources (natural capitalization). However, The Nature Conservancy presents an interesting recommendation by focusing on the value *lost* due to lack of conservation, and the approach could be worth investigating further.

- **Provide patient capital/slow money to invest in long-term structural change toward a sustainable agriculture system.** Similar to the [HAFA case study](#), private investors could purchase land and provide long-term leases with favorable buyout provisions to land cooperatives or other forms of collective ownership by communities would help to democratize land ownership.

## Education

### *For landowners*

- **Integrate conservation into succession planning.** Conservation is lacking from estate planning and conversations around farmland transfer.<sup>34</sup> Changing this will require engaging with landowners as well as succession and estate planning attorneys who specialize in farmland. Outreach could be conducted through national and state-level Continuing Legal Education opportunities that provides training and templates with conservation language that attorneys can incorporate into trusts they establish with their clients.
  - This effort should dovetail with the establishment of a ‘Commission on Farm Transitions – Needs for 2050,’ which was authorized by the 2018 Farm Bill to conduct a study on farmland transfer.
- **Develop outreach and engagement strategies for NOLs.** NOLs are consistently cited as an underserved group when it comes to resources on conservation.<sup>32</sup> However, many resources already exist. For example, lease templates that support conservation practices are provided by

organizations like CA FarmLink, The Nature Conservancy, as well as Iowa State and Ohio State Universities, among others. The greater challenge may be a matter of actually reaching NOLs. One approach may be to target NOLs through expanded extension services,<sup>33</sup> but a community or peer-driven aspect of the outreach may be important given NOL's tendency to rely on friends and neighbors for information. Specifically, engaging with women NOLs could lead to greater opportunities for land stewardship. Dr. Peggy Petrzeka at Utah State and Dr. Wendong Zhang at Iowa State are among scholars doing important research in this area.

#### *For producers:*

- **Support agroecology education programs to build a pipeline of skilled practitioners.** A shift toward regenerative agriculture will require more skilled practitioners. Support for the expansion of existing training programs, such as [Understanding Ag](#), would help to meet the increasing demand for its services. However, this moment also represents an opportunity to elevate the voices and skills of the underappreciated BIPOC land stewards in the U.S., including Indigenous and Black farmers, as well as farmworkers, many of whom are Hispanic. A training program that gives these practitioners opportunities to share their knowledge and become educators themselves, would help to create a pipeline for agroecological practitioners. They should also be included in the development of localized stewardship standards for measuring ecosystem services, which could incorporate Traditional Ecological Knowledge (TEK), while ensuring Indigenous knowledge isn't exploited.
  - There may be an opportunity for this type of training to work in tandem with the Farm Conservation Corps outlined in the Justice for Black Farmers Act or farm incubator programs such as the USDA's BFRDP. These programs could play a role in fostering the development of producer cooperatives that encourage peer-to-peer learning and the expansion of this type of agroecological training.<sup>7</sup>

#### *For investors:*

- Educate financial advisors about investing in climate-smart agriculture to increase awareness and interest among investors. Provide them with tools to help them critically evaluate the effectiveness of investment opportunities and their social and environmental impacts.

## Research Limitations

As discussed above in the [Methods](#) section, this research was conducted over a span of 4 months. The time constraint limited the number and scope of interviews conducted. Because of the small sample size, findings from the interviews should be considered anecdotal and not necessarily representative of broader populations. Interview selection was also subject to snowball sampling, which tends to skew the diversity of perspectives included. Additional systematic research should be conducted with a larger, more diverse sample to corroborate the findings in this report.

A few limitations should be highlighted about the interviews with landowners and farmers in particular. The farmers we were able to connect with more extensively on Zoom or over the phone were all white, established farmers who owned some portion of their land. As this report has demonstrated, many advantages come with being white landowners, so their views are not representatives of the many farmers who are disadvantaged in these regards. Informal conversations with BIPOC tenant farmers occurred at farmers markets in the Bay Area, which again only provides anecdotal findings to a very specific subpopulation. This is an important consideration (and significant challenge) given the heterogeneity of farmers even within a region, nonetheless across the U.S. Additionally, we were not able to interview any NOLs directly, only owner-operators. The American Farmland Trust survey stood in as a proxy, as well as fairly extensive existing research on NOLs.

Although we interviewed a number of firms that invest in farmland, we did not speak with individual investors about their understanding of, experiences with, or interests in impact investing. This stakeholder group would be worth engaging with further, as well as financial advisors to high net worth individuals or money managers of family offices.

Finally, ideas for the design of a FLIT model continued to evolve as research and interviews provided insights and highlighted caveats. The final recommendations would therefore benefit from an additional round of feedback from the interviewees, as well as a much broader sample. Despite the limitations, this research aims to patch together a number of related pieces to a complex puzzle and highlight the most impactful levers for change.

## Conclusion

*“To scale requires precision, organization, and efficiency—there is no room for error. Scalable actions are therefore often homogenizing.”<sup>65</sup>*  
– Dr. Anna Tsing, The Scalability Project

The research for this project has highlighted a fundamental tension in the current food system between scale and equity. Big is not inherently bad. In fact, we need to think big when designing solutions for a more sustainable future. But we need to reimagine how to achieve scale, especially when thinking about regenerative practices that require substantial customization to regional and local environments. Agroecological transitions tend to be messy and non-linear.<sup>66</sup> Scale might be measured as the aggregate of many smaller, interconnected farm networks that promote diversity, variability, and adaptability. However, scale is most easily achieved through the dominant system, which is currently driven by the ‘feed the world’ narrative, and therefore *yield*. An attempt to implement regenerative farming practices in a system that is driven by overproduction is like using a Band-Aid to stop internal bleeding.

Instead, we need to recognize that millions of taxpayer dollars are being funneled into a system that is actively degrading the environment and perpetuating inequities in agriculture. Solutions like carbon tax credits and innovative new technologies offer shiny distractions from the root cause of the problem. These solutions are far more appealing because they don’t demand the introspection required to confront the real reasons why we are here today—which is by our own, very intentional design. As explained by Martin Lemos, Executive Director of the National Young Farmers Coalition, “our agricultural policy is a land-wealth preservation strategy.”<sup>39</sup> Systemic change would require a shift in power dynamics that diversifies land access and its associated benefits.

Private financial investment is a rather unlikely conspirator for this endeavor. That said, increasing numbers of investors are recognizing the outsized impact their investments have on the environment. Simultaneously, the Biden Administration has demonstrated renewed commitments to addressing climate change and issues of social inequity. The private sector can provide a platform for more successful bipartisan policymaking, evidenced by the increasing support of carbon markets from both sides of the aisle. In this moment of reckoning, let’s be sure to co-invest in solutions that will actually address the internal bleeding of the system. Reimagining farmland investment may be among those solutions, but it will require a revaluation of agriculture as more than just a source of production, and a renewed respect for people and their relationships to the land on which we depend.

## Key Terms

**Agroecology:** A discipline that uses ecology to study, design, and manage agricultural systems that are productive but also sustainable through resource conservation and regeneration techniques; used interchangeably in this report with ‘regenerative agriculture.’

**Beginning farmers:** Farmers with 10 years or less experience managing farming operations.<sup>9</sup>

**BIPOC:** Black, Indigenous, and People of Color.

**Carbon Sequestration:** The process of capturing atmospheric carbon dioxide and storing it in various natural reservoirs (or carbon sinks), such as oceans, forests, and soils.

**Climate-smart agriculture:** Agricultural systems that ensure food security in a changing climate; used in this report interchangeably with ‘sustainable agriculture’ and ‘regenerative agriculture.’

**Cropland:** Farmland used specifically for the production of crops.

**Ecosystem Services:** Benefits provided to the public through healthy, natural ecosystems, such as the purification of air and water or sequestration of carbon out of the atmosphere.

**Land-operators:** Farmers who actively operate farmland.

**Land justice:** Through a historical lens that recognizes structural inequalities exacerbated by land dispossession of BIPOC peoples, land justice connects issues of social equity to the rights associated with land access and land sovereignty.

**Land sovereignty:** “The right of working peoples to have effective access to, use of, and control over land and the benefits of its use and occupation, where land is understood as resource, territory, and landscape.”<sup>65</sup>

**NOLs:** Non-operator landowners, who are not actively involved in farming the land they own.

**No-till farming:** Farming without using a plow to till the soil, which turns over the top 6-10 inches of soil before planting. No-till or low-till farming helps to reduce disturbance and maintain moisture in the soil.<sup>1</sup>

**Owner-operators:** Farmers who own and actively operate their farmland.

**Producers:** Farm operators; used in this paper as synonymous with ‘farmers.’

**Regenerative Agriculture:** “A system of land stewardship, rooted in centuries old indigenous wisdom, that provides healthy, nutrient rich food for all people, while continuously restoring and nourishing the ecological, social, and cultural systems unique to every place.”<sup>17</sup> (However there are many definitions.)

**Social Investment:** “The investment of labour, ingenuity, and social commitment made by those who work the land for the purpose of realizing future security and social wellbeing and political goals as well as economic development.”<sup>62</sup>

**Sweat equity:** The value of unpaid labor dedicated to improving an asset, such as land.

**Tenants:** Farmers who rent the land they operate.

**Traditional Ecological Knowledge (TEK):** Knowledge that has been acquired by Indigenous peoples over hundreds or thousands of years through their relationships and contact with the environment, which continues to evolve (sometimes referred to as ‘Indigenous Knowledge’).<sup>22</sup>

**Young farmers:** Farmers who are in their early years of farming, and largely under the age of 40.<sup>9</sup>

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