



ECONOMIC +
ENVIRONMENTAL
RISK **COALITION**

Exploring the Regulatory and Policy Aspects of Agricultural Credit and Finance for Conservation Investments

*A Discussion Paper for the AGree Economic
and Environmental Risk Coalition*

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This publication was commissioned by AGree to inform and stimulate dialogue; it does not represent official AGree positions.

Foreword

Finance and lending, and the policies and regulations governing them, play a critical, albeit not fully understood, role in the adoption of conservation agricultural practices. This paper is intended to spur the discussion and exploration of innovative approaches for financing investments that improve soil health and reduce risk. The paper highlights relevant federal policies and offers ideas to inform the AGree Economic and Environmental Risk Coalition’s exploration of lending, credit, and finance mechanisms that could help to advance soil health and conservation practices. The paper explores policy ideas relevant to the Farm Credit System, the Federal Agricultural Mortgage Corporation, and the role of soil health in farmland appraisals.

Farmers’ and landowners’ investments in activities that improve soil health—including practices such as cover crops, managed tillage, diverse crop rotations, and more—have the potential to increase resilience to severe weather events, reduce environmental impacts, increase productivity over time, and reduce overall operational and financial risk for farmers. Decisions about investing in soil health, however, are complex. The availability of capital, the conditions attached to financing, and the impact on farmers’ access to operating credit are among the factors farmers weigh in their management decisions.

This paper was written by Jonathan Coppess and Bruce Sherrick from the University of Illinois, with input from Meridian Institute. While the concepts discussed in the paper will enrich the AGree Coalition’s discussions, they do not represent official AGree positions.

We hope you find this paper to be a useful resource.



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Introduction

The AGree Economic and Environmental Risk Coalition creates a bridge between positive environmental outcomes and profitability for farmers and ranchers. Representing a diverse range of interests, Coalition members include researchers, academics, farmers, former officials from the U.S. Department of Agriculture (USDA), and NGO leaders—all of whom advocate for common-sense policies that protect both natural resources and farmers' livelihoods.

During negotiations over the 2018 Farm Bill, the Coalition lobbied for provisions that improve agricultural data collection and encourage the adoption of cover crops; both provisions were included in the bill's final text. Since the Farm Bill's passage, the Coalition has supported activities to implement these Farm Bill measures. The Coalition continues to work on the following four topics.

- **Agriculture Data:** Working with Congress and the USDA to shape policies that will support greater data integration and analysis—and help farmers make important land management decisions
- **Cover Crops:** Tracking existing cover crop resources available nationwide in order to assist policymakers, farmers, and advocacy groups in understanding the full scope of cover crop programs and incentives
- **Crop Insurance:** Advocating for federal risk management programs that encourage farmers to implement practices that reduce producers' long-term risk, in addition to improving soil health and water quality
- **Agricultural Finance:** Increasing opportunities for banks and investors to finance farmers and landowners who want to invest in conservation practices that increase profitability, enhance property values, and reduce producers' long-term risk

As part of its next phase of work, the Coalition is exploring a range of opportunities at the intersection of crop insurance, agricultural lending and finance,

and farm risk management, including conservation ag data frameworks for agricultural lenders, specialized loan products for conservation investments, and enabling policies for conservation ag lending, credit, and finance. This discussion paper focuses on enabling policies.

The paper is intended to inform the Coalition's exploration of enabling policies to better deploy lending, credit, and finance to advance conservation practices and other practices that reduce risk. It discusses federal mechanisms that could help ag lenders and investors improve access to capital for farmers who adopt conservation and other risk mitigating practices. The paper covers the following topics:

- **The Farm Credit System (FCS) and the Federal Agricultural Mortgage Corporation ("Farmer Mac"):** Both entities were created by Congress and are regulated by the Farm Credit Administration, an independent federal agency. The FCS is the largest agricultural lender in the U.S., funding approximately 41 percent of all U.S. farm business debt. The sections of this paper on the FCS and Farmer Mac explore potential opportunities to improve lending for conservation investments through these entities.
- **Farmland Appraisals:** Farm lenders generally require an appraisal before giving final approval to a farm mortgage, to ensure that the loan amount is not more than a specified fraction of the current value of the property. Soil health metrics are often not directly considered in farmland appraisals, although they likely manifest in soil productivity and management capacity, which are considered. This section of the paper explores ways to help appraisers and agricultural investors better consider the value of practices that improve soil health.

The paper is an initial exploration of farm finance policy and regulatory tools identified by Coalition members. We expect that additional topics will be added as the Coalition discusses these issues in 2020.

Background

Investments in agricultural conservation practices are receiving attention due to interest in the relationship between farming and environmental and climate-related impacts (both positive and negative). Most farmers cannot farm without access to credit, and many farmers perceive conservation investments as a cost with an uncertain return. But these investments also have real value for the farmland asset over multiple years. And by building soil health, farmers may reduce long-term risk by, for instance, increasing resilience to extreme weather events and limiting exposure to regulatory risk. To reduce risk and create value over the long term in this way, farmers and landowners need new tools to incorporate into operating and farm management decisions; similarly, agricultural lenders need new tools to incorporate into lending decisions.

Given the importance of credit to farmers, there are fundamental questions about the role of capital markets in facilitating the adoption of conservation practices. Finance may not be the major barrier to farmers investing in these practices, but can innovative loan and credit programs reduce the barriers and ultimately remove disincentives?

Figures 2 through 4 in the Appendix offer a breakdown of farm-sector debt data, illustrating the importance of credit to farmers and the institutions that provide that credit. Discussions about potential policy channels and mechanisms for impact should be grounded in market factors that can influence investment in conservation activities or soil health initiatives. The existing market channels that supply farmers with credit are extensive, well developed, and meaningfully distributed across local lenders, national lenders, and government-sponsored enterprise (GSE) lending channels such as Farmer Mac. Market volumes of debt have grown over time with increases in asset values in the agricultural sector (now totaling about \$3 trillion), but have

Conservation Investments

In the absence of an exhaustive list or a singular definition, we use the term “conservation investments” to refer to the practices or structures that improve soil health; reduce soil erosion, degradation, or nutrient loss; and improve water management and effluent capture. Typical examples include buffer strips, contour installations, cover crops, water and sediment control basins, tillage management, soil structure investments, organic matter management, and rotational practices.

maintained a fairly low but gradually growing share of those asset values (roughly 14 percent of the real estate share of assets, which in turn represents about 85 percent of total assets).

Discussion

The purpose of this paper is to initiate an evaluation of specific policy issues regarding the role of lending in support of farm-level conservation-related investments. Other channels that foster investment include equity suppliers and government grants; those are outside the scope of this discussion.

Improving soil health often involves direct costs to the farmer or landowner. Soil health improvements can take many years to achieve, and these efforts can increase near-term production costs while slowly building improved future potential. Farmers who own land and farm structures leverage their assets to finance farm operations using a variety of credit and loan mechanisms. The cost of the debt component relates directly to the repayment source and variability, as well as the security underlying the position, and conservation investments can delay the potential for higher returns.

It is important to note, too, that roughly 60 percent of agricultural land in the Corn Belt is farmed under some form of a rental arrangement. In typical cases, the operator and owner have separate and sometimes competing interests. The asset owner may have gains in the asset value from conservation investments but may not be able to realize or monetize these directly. The operator may be reticent to invest in practices that could increase rental costs with little immediate yield benefit. In other words, a given investment may increase the land's asset value but not enhance the tenant's income potential. This misalignment of incentives can affect both the adoption of conservation practices and the management of externalities.

At the federal level, two basic policy types affect natural resource conservation in farming: (1) a quasi-regulatory system wherein compliance with specific conservation requirements makes one eligible for federal assistance, as with farm income support payments; and (2) direct financial and technical assistance for conservation through programmatic payments and related efforts.

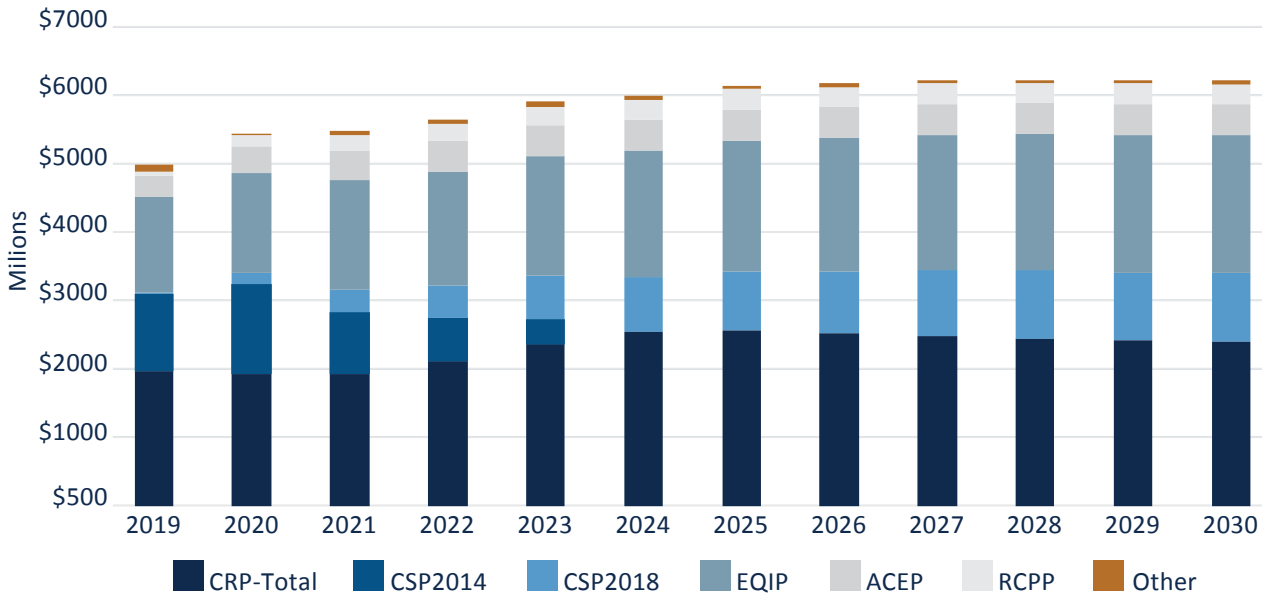
To be eligible for direct assistance payments provided by federal farm policy, farmers (and farmland owners) must be in compliance with requirements for highly erodible farmland and wetlands. For the former, the farmer must have in place—and follow—an erosion-control plan approved by the USDA's Natural Resources Conservation Service (NRCS). The latter specifies that draining wetlands for farming, or farming on wetlands previously drained (generally since 1990), makes the producer ineligible for assistance. Notably, ineligibility that spans multiple years of programmatic assistance is subject to being repaid by any producer found out of compliance. Compliance also applies specifically to Farm Service Agency (FSA) loans and loan guarantees, and the Farm Credit System includes compliance in its lending decisions (see Section 4.39: Encouragement of Conservation Practices in the Farm Credit statutes). FSA and FCS lenders consider these types of conservation compliance issues in their lending decisions, as they assess the risk of a borrower defaulting on a loan.

The federal Farm Bill authorizes the USDA to provide financial and technical assistance—for instance, through the Conservation Stewardship Program and the Environmental Quality Incentives Program—for on-farm natural resources conservation activities. Farm Bill-related activities represent the largest federal investment in conservation on private lands and provide \$5 billion to \$6 billion annually in assistance. For example, the bill includes cost-sharing programs that cover a share of the costs of installing, maintaining, or improving specific conservation practices such as contour strips, erosion control devices, and water management structures. Other programs provide annual rental payments on land that is considered too environmentally sensitive for row-crop production, or annual contract payments for conservation efforts on working lands across an entire farming operation. Figure 1 provides estimated budget outlays for conservation programs between 2019 and 2030.

One key takeaway from these policies and programs is that conservation is considered a direct cost to the farmer and one that may not provide an immediate, direct return (or any return) to the farmer's bottom line. Unlike other operating costs or investments, such as specific-attribute seeds or synthetic fertilizers and pesticides, many farmers view the costs of conservation as not directly linked to revenue—which is measured largely in terms of production and yield. This perception is a major barrier to behavior change and a significant challenge that needs to be considered in structuring credit for conservation investments.

For convenience, the following discussion is organized by policy and institutional categories that directly influence the provision of debt capital to agricultural producers, but which have largely separate regulatory bodies and authorities. At the administrative level these are distinct, though at the producer level they are intertwined.

Figure 1 | Estimated Conservation Program Outlays 2019-2030, Congressional Budget Office (January 2020)



Farm Credit System

The availability of credit for farming and the challenges inherent in lending to farmers have been driving forces behind substantial federal policy efforts and investments. The single most notable and consequential policy effort has been the creation and operation of the Farm Credit System. The FCS is more than 100 years old; it was created in 1916 in response to concerns about the difficulties farmers faced obtaining credit. That year, Congress created Federal Land Banks to provide long-term credit to farmers for purchasing farmland, and since then, the FCS has helped to provide a reliable source of credit to farmers and ranchers. As currently constituted, the Farm Credit System consists of the Farm Credit Funding Corporation, four regional wholesale banks, and 68 Agricultural Credit Associations.

The federal government authorized, chartered, and supported the FCS in various ways, including by creating a conduit to agency funding that obviates the need for deposit collection for funding and by creating a perception of government support through

its status as a GSE. While the FCS has proven to be an important lending option for farmers, it has experienced significant challenges that highlight fundamental issues of risk in farm credit.

Arguably the most consequential changes in FCS history were made by the Farm Credit Act of 1971, which completely revised the system. The 1971 Act passed only after a commission, established in 1969 by the Federal Farm Credit Board, studied the issue of farm credit for a year. It was a time of growing concern about the availability of credit to farmers that matched their needs and demands. Among the major recommendations adopted by Congress was to allow more lending decisions to be made at the local level and, most consequentially, to loosen lending requirements. Prior to 1971, the Land Banks were limited, in the first lien for a real estate loan, to 65 percent of the normal farm value; the 1971 Act increased that amount to 85 percent of the appraised real estate value. This move was designed to not only increase the lending limit but also to expand the credit factors used in the lending decision beyond just the value of the collateral.

The 1971 Act was swiftly followed by major changes in farm commodities markets and federal support policies, as well as larger changes in the economy. It helped fuel the massive growth of farm debt, as well as farm expansion in terms of acres and consolidation. In 1979, inflated land values and heavy debt loads collided with federal efforts to combat inflation, followed by the farm economic crisis that plagued much of agriculture in the 1980s. The FCS was nearly a victim of the crisis itself, perched on the brink of collapse in the mid-1980s. The system had to be bailed out and reformed by Congress in three successive legislative efforts in 1985, 1986, and 1987.

The Farm Credit Act as modified over the years allows banks to establish differential interest rates for loans based on a variety of factors that may include loan type, purpose, amount, quality, funding or operating costs, or similar factors or combinations of factors. Differential interest rates are routinely used by farm credit banks to compensate for different risks and ensure the success of certain classes of farmers. In the adoption of differential interest rate programs, banks also consider the special credit needs of classes of farmers with positive attributes that they want to protect, advance, or manage.

For example, a potential analog to conservation investments in the farm credit space is the Young, Beginning, and Small Farmer (YBS) program. That program was authorized by Congress in the 1980 Farm Credit Act Amendments and was the result of an outgrowth of concern that the boom years of the 1970s had resulted in fewer farmers, with acute concerns about the ability of new or young farmers to enter the profession. Congress created the YBS requirement in 1980, instructing the FCS to provide “a program for furnishing sound and constructive credit and related services to young, beginning, and small farmers and ranchers.” The resulting YBS lending program is designed for farmers age 35 or younger or with 10 years of experience or less, or farmers with less than \$250,000 in annual sales. This is an important precedent for designing programs that promote specific objectives, which could include

programs for conservation investments that balance the need for operating credit with long-term value creation and risk reduction.

OPPORTUNITIES FOR THE AGREE COALITION

The FCS policy framework offers the flexibility to advance the availability of debt capital used for conservation investments, for instance by exploring the following ideas.

CONSERVATION LENDING PROGRAM

Should a lending program be developed for conservation investments that meets the FCA’s requirements for a differential interest rate program? Conservation practices may seem like an operating cost, but, as discussed, they also have real value for the farmland asset over multiple years. In addition, improved soil health reduces long-term risk—for instance, by increasing resilience to extreme weather events and limiting exposure to regulatory risk. A loan program could be explored that better bridges the immediate cash and operating needs of the farmer with the long-term value, risk reduction, and potential asset returns resulting from the conservation investment. Federal policy has focused on conservation payments and compliance but has not explored specialized lending programs. Perhaps a study and report on this topic could be commissioned that would lay the foundation for applicable conservation-related adjustments to the FCS. (Commissioned studies have been precursor to past changes to the FCS.)

Another option could be a conservation-oriented transitional lending program. For example, last fall Rabobank announced a new loan product for farmers seeking to complete the organic certification process. The USDA requires a three-year transition period for farmers seeking to become certified organic producers—a period during which the farmer is likely to experience lower yields without the premium that comes with organic production. Rabobank’s program utilizes offtake agreements, which limit risk in the

conversion period by improving the security of the cash flow in the post-conversion period. The program also has a provision to restructure cash flow patterns to better match those expected under a conversion production path. It is worth considering if similar options exist in cases where future asset value changes can be associated with structured financial contracts that more directly match cash flow patterns resulting from conservation investments.

CONSERVATION IMPACT ANALYSIS TO PROMOTE LENDING

Under U.S. Environmental Protection Agency rules, lenders already have certain responsibilities to require an environmental audit if there is a mortgage and associated security interest that could convey lender liability for environmental degradation associated with a property. Similarly, conservation or sustainability impact analyses could be created that promote lending (perhaps through subsidized interest rates) for farm operations that perform best management practices (BMPs) plus conservation activities (“BMP+”).

Based on surveys conducted in 2018, there seems to be limited demand for this kind of sustainability scoring combined with reduced interest rates. A different approach could be evaluated that flips the responsibility—that is, a regulatory requirement for sustainability scoring combined with a positive incentive. The informational and monitoring systems required to perform sustainability scoring are becoming normalized and very low cost, to the point that implementation and monitoring is less of a hurdle. Advances in geospatial monitoring and precision agriculture data, for example, could be leveraged to create practical and cost-effective tools.

Nonetheless, there is likely to be significant pushback against any program that suggests additional producer requirements related to a promoted conservation outcome, or against any environmentally targeted requirements from the FCS, because producers generally regard other agencies as the sources of BMP and conservation practice guidance. And, lender liability laws do generally prohibit direct participation in producers’ management decisions, to avoid conflicts

of interest or culpability for failure in performance. Perhaps approaches could be explored that allow banks to reference the Good Farming Practices endorsed by the NRCS, similar to the USDA Risk Management Agency’s reference to such practices in the Good Farming Practice Determination Standards Handbook, which is used to make practice determinations in the administration of crop insurance.

Federal Agricultural Mortgage Corporation

Farmer Mac was created by the Agricultural Credit Act of 1987, in response to the farm crisis of the 1980s. Its purpose is to increase access to capital, and reduce the cost of that capital, for the benefit of American agriculture and rural communities. Farmer Mac is a federally chartered, publicly traded corporation responsible for guaranteeing the timely repayment of principal and interest to investors in the agricultural secondary market. The secondary market allows a lending institution to sell a qualified farm real estate loan to an agricultural mortgage marketing facility, which packages these loans and sells securities to investors that are backed by, or represent interests in, the underlying loans.

The company was founded during a \$4 billion bailout of the Farm Credit System, in the hope of providing an alternative source of credit to farmers following the models of Fannie Mae and Freddie Mac, both GSEs that securitize residential mortgages and sell them to investors as mortgage-backed securities.

Farmer Mac buys eligible loans from commercial banks, the FCS, and specialized agricultural mortgage originators (similar to mortgage brokers for home mortgages) if the collateral meets the authorized requirements for quality and underwriting conditions. In addition to participating in the agricultural secondary market, Farmer Mac has a strong mandate and presence in lending to rural utility and energy cooperatives and their upstream lenders.

OPPORTUNITIES FOR THE AGREE COALITION

Given Farmer Mac’s mandate and infrastructure, below are several ideas that could apply its lending services to conservation-oriented outcomes. While issues relating to technical assistance and ensuring conservation outcomes would need to be explored, the following ideas would likely be feasible within the current policy and regulatory frameworks of the FCS and Farmer Mac. Existing policies and regulations provide the flexibility needed to explore new opportunities that respond to emerging demand for specialized loan products for farmers investing in conservation practices.

POOLING CONSERVATION LOAN PRODUCTS

Farmer Mac can create specialized pooled and securitized mortgage exposure that adds value over and above the sum of the underlying mortgage loan amounts. This represents an important (and already existing) feature that could be employed if first-line lenders were to originate a set of mortgages associated with conservation investments. In other words, if the problem at the farm level is that the market for conservation loans is small and few cases for conservation lending exist, Farmer Mac could perhaps be the pooler/securitizer to take the risk of a limited number of assets from individual lenders and create more viable, pooled, and tranching positions (i.e., positions split up by risk for different buyers that tolerate different risk levels) to offer to a broader set of investors. Farmer Mac also has existing authority to purchase other government loan products (e.g., Farmer Mac is the largest purchaser of USDA Farm Service Agency loans) and can issue guarantees to banks on the timely payment of principal and interest on agricultural loans, thereby decreasing the cost of capital associated with loans to farmers.

SMALL-SCALE GREEN BONDS

While different definitions of “green bonds” exist, the general intent is that the bond verifies that a specific investment meets predetermined environmental conditions—for example, investments in fixed conservation structures such as water management

structures, methane digestors, bioreactors, water treatment systems, or solar energy fields. Green bonds carry specific reputational risks, however, and it is unclear how Farmer Mac would manage the monitoring that investors could require to ensure that environmental conditions, based on the originators’ preferences, were maintained. In any case, Farmer Mac is likely the only viable pooler of these types of investments and would likely play a role regardless of where the origination occurred.

RENEWABLE ENERGY AND SENSITIVE LANDS

There are also opportunities related to renewable energy (currently largely focused on wind and solar) and the growing mandate for agricultural processing facilities with a “cleaner” environmental footprint. The current authority set for Farmer Mac was written primarily during the farm crisis of the early 1980s and included some references to “cooperatives” in the energy space that likely did not anticipate the growth in other renewables that has since occurred. Modernizing Farmer Mac mandates could spur substantial investment in cleaner energy sources on sensitive agricultural environmental footprints (both production and processing linkages) if the statutory language were updated to reflect current and future trends toward lower-carbon agricultural systems. Perhaps co-benefits could be created by identifying sensitive parcels of land that would be suitable for solar power generation and could be taken out of production on a more permanent basis.

Farmland Appraisals

The Financial Institutions Reform, Recovery, and Enforcement Act of 1989 required states to develop systems for licensing and certifying real estate appraisers. Currently, all real estate appraisers must be state-licensed and -certified. The Appraisal Foundation is the primary standards body; its Appraisal Standards Board promulgates and updates best practices as codified in the Uniform Standards of Professional Appraisal Practice, while its Appraisal Qualifications Board promulgates minimum standards for appraiser certification and licensing.

The federal government regulates appraisers indirectly, because if the Appraisal Subcommittee of the Federal Financial Institutions Examination Council finds that a particular state’s regulation and certification program for appraisers is inadequate, then under federal regulations all appraisers in that state would no longer be eligible to conduct appraisals for federally chartered banks.

Several professional appraisal groups, organized as private nonprofits, establish and enforce standards. Relevant organizations include the American Society of Farm Managers and Rural Appraisers (ASFMRA), the American Society of Appraisers, and the Appraisal Institute (AI). The agricultural appraisal industry exists as a subset of the independent appraisal industry.

Becoming a licensed appraiser requires attendance in appraisal technique classes, ethical training, and exams, as well as a review of the candidate’s work by designated appraisers. In agriculture, relevant trade organizations (e.g., the Realtors Land Institute, the MAI, and the ASFMRA) offer additional specific credentials related to agricultural applications. One important feature is that all licensed professionals require continuing education certifications to maintain current licensure or organizational designation.

Institutional investors in farmland are often subject to substantially more complex reporting requirements than other farmland owners, including frequent independent valuations of properties and rolling independent appraisals (as often as annually), with quarterly valuation updates via indexing methods. Moreover, whenever a property is mortgaged, an independent assessment of value will usually be required for the security holder’s purposes. In any case, whenever an agricultural property undergoes a change in title holder, an appraisal—or at minimum a valuation update that is connected in some form to appraisal activities—is usually required.

There are also opportunities related to renewable energy (currently largely focused on wind and solar) and the growing mandate for agricultural processing facilities with a “cleaner” environmental footprint.

The appraisal industry is going through a radical change due to technological advances that offer near-real-time collection and use of wide-scale (larger than available to an individual) datasets with real transactional details, imagery that historically would have been prohibitively expensive, and increasingly sophisticated analytical models and AI analogs that provide incredibly broad and easily updated measures of valuation, or elements that directly affect valuation. AcreValue.com is a rough analog for agriculture, similar to Zillow.com for residential real estate, but with more data layers that show income-related features that are more important in agricultural valuation than in residential real estate.

A question that naturally arises is whether information related to the existence of conservation investments is available and accurately reflected in asset values. A related question is whether there has been a change in the impact of conservation investments (in other words, a change in the perceived value) as awareness has evolved regarding the effect of certain practices such as cover crop use. Landowners may be more likely to invest in conservation agriculture if it leads to increased value that is in turn reflected in appraised values.

While it could be tempting to conclude that appraisers are not well-informed about the value of soil health, due to the low prevalence of conservation activities in the past, it is unlikely that conservation practices are systematically miscalibrated in total property values. Soil health, for example, is sometimes cited as a feature that is absent from appraisal reports, but it likely manifests itself in soil productivity and management capacity, which *are* typically considered in appraisals.

OPPORTUNITIES FOR THE AGREE COALITION

Below are two ideas that could increase understanding of the value of conservation investments within the appraiser and agricultural investment communities. Exploring these ideas should be feasible within current federal and state regulations and would require engagement with professional organizations; it would not necessarily require federal policy interventions.

CERTIFIED CONSERVATION PRACTICE APPRAISER

Productivity factors are typically the main elements of land valuation. Most farmland buyers are familiar with yield histories, soil conditions, and other factors that affect the production value of a parcel of land. However, with more information available, buyers are also able to more accurately relate soil conditions to yield potential and management costs. The appraisal industry could exploit these insights by advancing understanding of the benefits of conservation investments, and more broadly by promoting an awareness of conservation impacts through continuing education curricula related to conservation-related investment valuations. Development of a Certified Conservation Practice Appraiser designation would be relatively low cost and could advance the visibility of conservation activities within the appraisal industry. Further, such a certification might be viewed as an independent validation of the benefits of conservation investment that arise from other programs' requirements (i.e., best management practices for crop insurance). The point is that the certification—as a separate set of metrics for the valuation of conservation practices—would both define and elevate the role of conservation investments as practices that increase asset values.

SUSTAINABILITY CERTIFICATION FOR INSTITUTIONAL LAND INVESTORS

An additional idea could be aimed at institutional investors who are particularly sensitive to and aware of the need to maintain spotless environmental records related to owned properties. As a group,

they are extremely interested in developing third-party validation systems that would verify and/or certify production practices on owned properties and demonstrate “better than the norm” conditions and activities. For instance, the Hancock Natural Resource Group recently completed an inaugural sustainability examination of select managed agricultural operations in its investment portfolio. They developed a standard to meet the economic, environmental, social, and governance interests of their investors and the supply chain. While implementation constraints may exist, standardized tools could be developed for institutional investors like these. Institutional investors in agricultural production assets represent a growing share of the market and are a particularly visible layer in which to operate.

Conclusion

To help farmers and ranchers improve the health of natural resources and the financial viability of farming itself, continued work is needed to deepen our understanding of—and identify appropriate actions to support—a diverse range of risk management approaches. Conservation investments are still largely considered a cost with uncertain returns to farmers, landowners, and operators. In this context, the role of finance and financial policies and regulations is an essential element of the conversation.

We look forward to discussing these and other topics at upcoming Coalition meetings. We expect that several of these issues will require deeper analysis and that new topics may emerge. In the course of developing this paper, for instance, additional ideas were raised, including the following.

- **Outcome-based input pricing.** Consider the vendor-financed model for agriculture and its application to conservation investments, as well as the movement of the input industry toward outcome-based pricing, such that a landowner or operator only pays if outcomes improve. Could this work with conservation investments? Changing

technological norms have nearly always been initially financed by the vendor and moved into the mainstream after widespread adoption. It appears that input suppliers such as seed companies and providers of GPS applications are increasingly willing to accept residual economic rents (i.e., additional payment to landowners for the land’s environmental services). Conservation investments that require different practices (e.g., conservation tillage, cover crop planting, fertilizer placement) seem like natural analogs.

- **An investment bank for Conservation Reserve Program (CRP) locations.** An investment bank approach could help rearrange aggregations of CRP lands to focus on the most sensitive areas and develop mitigation credits inside the CRP program overall, rather than continuing county-based allocations and only utilizing the wetland mitigation market. Changes to the Conservation Stewardship Program in the 2018 Farm Bill (e.g., reducing mandatory funding over the life of the program and moving from an acre-based to a dollar-based program) could create opportunities for an investment bank approach that facilitates greater coordination and streamlines conservation programs.
- **Rental payments in the form of conservation investments.** Landowners without current income requirements may prefer asset value appreciation over taxable income. For operators, lease payments are an expense. So, rental payments in the form of investment in conservation practices could allow “banking” of conservation investments in a form that would create a slight tax advantage for the landowner and result in no change to the operator’s income position.
- **Consumer credits paid for conservation-practice-certified production.** Consumers may be willing to pay for investments in conservation, similar to what already occurs with organic and other “free-from” labeling (e.g., free-from-GMOs, sustainable, biodynamic, regenerative). Perhaps there is benefit in exploring the creation of a “healthy soils” or

“carbon captured” label. However, financing development of the information and traceability mechanism, product identity management, and other elements of a label are not insignificant.

In addition, stakeholders have suggested that the Coalition might explore the role of regulatory agencies in promoting sustainable investments. Governments in various parts of the world are becoming more interested in creating policies aimed at promoting investments in the environment, social justice, and corporate governance among large institutional investors.

And, several individuals have asked the Coalition to explore policies that would apply to alternative agricultural lenders, such as input suppliers, equipment suppliers, and insurance companies. These alternative lenders are increasingly filling the gaps where traditional agricultural lenders might not be able to help high-risk borrowers. What does this trend suggest about the demand for loans, and how does this affect conservation agriculture?

The Coalition will also explore issues regarding access to finance for diversified farm operations. Production models that integrate diverse crop rotations and livestock have the potential to build soil health, increase profitability, and enhance resilience to external shocks. However, the risk profiles of diversified production systems are not always well understood by agricultural lenders. Although many agricultural lenders encourage their farmer customers to protect their investment with crop insurance, appropriate crop insurance products are not always available for these diverse operations.

In closing, we see great opportunity to better understand how access to credit and other financial instruments can strengthen or impede conservation investments. Armed with that knowledge and additional analysis, the Coalition and others can develop policy and regulatory approaches that will encourage greater conservation investments—agricultural practices that make sound economic and ecological sense—but have not yet made it into the mainstream canon.

Appendix: Farm-Sector Debt

Figures 2 through 4 offer a breakdown of data on total farm debt, reported by the USDA’s Economic Research Service (ERS). The ERS reported that farm-level debt has increased from \$315 billion in 2013 to a forecast of \$425 billion in 2020. Figure 2 illustrates the share of debt for real estate and non-real estate in the farm sector.

Further breaking down the debt picture for farmers, Figure 3 illustrates the share of total farm real estate debt by source, on average from 2013 to 2018. Total farm real estate debt averaged \$216 billion from 2013 to 2018, growing from roughly \$185 billion in 2013

to \$246 billion in 2018, with forecasts that it will reach \$265 billion in 2020. The Farm Credit System holds the largest share of farm real estate debt (45.96%), followed by commercial banks (37.63%).

Finally, Figure 4 illustrates the share of total farm non-real estate debt by source, on average from 2013 to 2018. Total farm non-real estate debt grew from \$130 billion in 2013 to \$156 billion in 2018, with forecasted total non-real estate farm debt to reach \$161 billion in 2020. Commercial banks held the largest share of non-real estate farm debt from 2013 to 2018 (48.5%), followed by the Farm Credit System (33%).

Figure 2 | Total Farm Sector Debt, Real Estate and non-Real Estate (ERS)

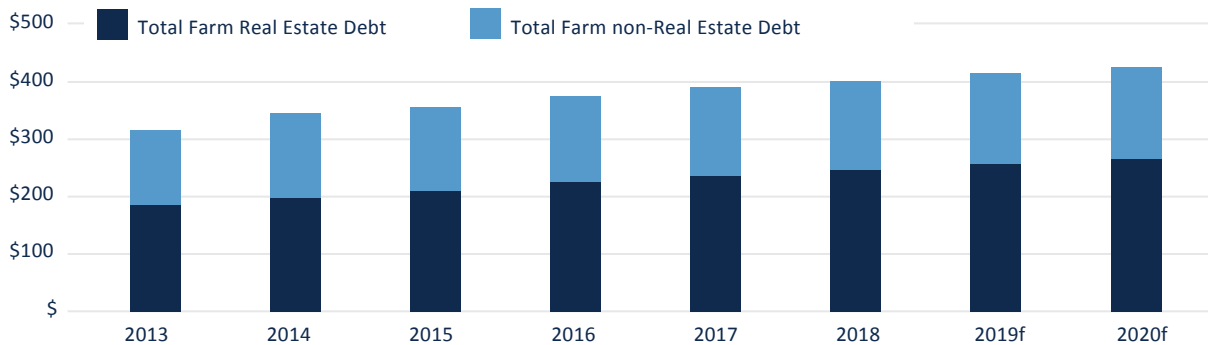


Figure 3 | Farm Real Estate Debt, by Source; Average 2013-2018 (ERS)

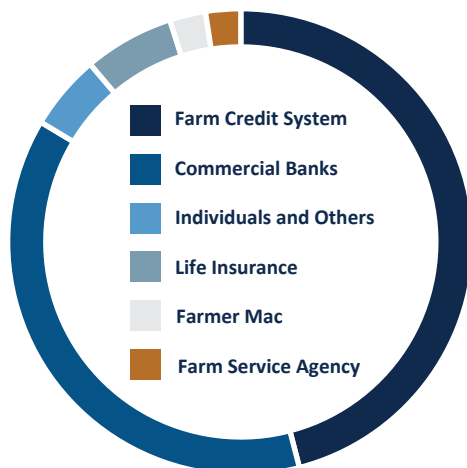
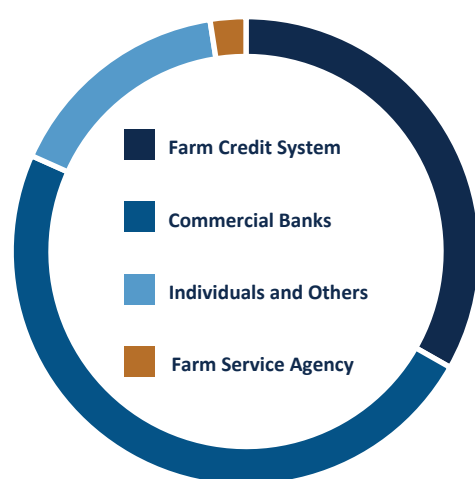


Figure 4 | Farm non-Real Estate Debt, by Source; 2013-2018 average (ERS)



The AGree Economic and Environmental Risk Coalition advocates for federal policy improvements to bridge the gap between the adoption of on-farm conservation practices and improving profitability for farmers and ranchers. Through collaboration and frank discussion, our work on crop insurance, agriculture data access, cover crops, and banking and finance is advancing the agricultural sector's movement towards a more resilient, profitable, and sustainable American agricultural system.

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