LAND TENURE AND CONSERVATION IN AGRICULTURE:

CREATING INCENTIVES FOR LANDOWNERS

MAY 2019

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ABOUT DELTA INSTITUTE

Established in 1998, Delta Institute is a Chicago-based nonprofit organization that collaborates with communities to solve complex environmental challenges across the Midwest. Delta Institute's Land Stewardship initiative seeks to increase the capacity of land owners—whether public or private—to better plan and enact land management practices. Over 100 practitioners, including farmers, land trusts, NGOs and local/state/federal government agencies have used tools and models that the Land Stewardship initiative has developed or leveraged to improve environmental outcomes in the Midwest.

Visit online at **www.delta-institute.org**.

This document and the tools provided aim to be action oriented and to provide the most current, correct, and clear information possible, but some information may have changed since publication. We encourage practitioners to reach out to us with questions, corrections, or to discuss implementation challenges. Please contact us at info@delta-institute.org.

Contributors
Olga Lyandres
David LeZaks
Ben Shorofsky
Ryan Smith
Amy Yanow

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EXECUTIVE SUMMARY

Agricultural land management decisions are situated within a complex and interconnected system, influenced by a suite of social and economic factors, many of which are difficult to control. Landowners can, but often don't, take it upon themselves to drive stewardship of their land. This report focuses on land ownership and tenure as levers to increase conservation and rebuild soil health in the Midwest, where over 50% of the agricultural land is leased.

This report explores the network of stakeholders, policies, and institutions through which soil health can be linked to the value of the land and serve as an incentive to change management of that land. Although soil health and management practices are not currently explicitly integrated into the land valuation system, we identify opportunities where such linkages can be created and utilized to rebuild soil health.

The strategies proposed focus on two aspects, technical and social - the need for better and more data to allow integration of soil health into land transactions and overcoming significant cultural barriers to shift the status quo among local practitioners.

This report compiles a set of resources that may be taken in concert or used separately by a variety of stakeholders to advance soil health and agricultural conservation practices on farmland in the Midwest and beyond. It examines how lease agreements can be used, in particular by institutional landowners, to ensure conservation is implemented by the farmers who lease the land. This report includes an inventory of public land leased for farming in Illinois and a synthesis of how it is managed. The inventory informed the suite of tools to enable integration of conservation into farm leases that include: models for governance, capacity building, data tracking and evaluation, and a "Conservation" lease framework, which can be adopted by institutional landowners as well as on privately held land.

TABLE OF CONTENTS

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INTRODUCTION

THE NEED FOR NEW APPROACHES

Despite significant investment of time and resources into reducing sediment and nutrient losses from agriculture in the Midwest, limited progress has been made in the last decade toward adoption of conservation practices that are needed to meet water quality targets, protect farmland from degradation, and build resilient rural communities. The dominant modes of agricultural production in the Midwest over the past century have resulted in significant losses of soil, and the critical benefits that soils provide. Globally, there is a growing focus on restoring soil health as the basis for food production and storage for water and carbon, an approach commonly referred to as regenerative agriculture.

Adoption of regenerative agriculture practices, such as keeping the ground covered and undisturbed, diversifying crops, and integrating livestock, at much higher levels across the region, will be necessary to generate impact. To close the gap there is a need to leverage and develop new solutions that can disrupt the status quo in ways that incentivize conservation innovation, unlock new funding streams to make agricultural food systems economically and ecologically sustainable, and scale up and remove barriers to widespread adoption. Market mechanisms vary greatly, though they have the potential to integrate and amplify actions across the value chain from producers to retailers to investors, driving changes in cropping systems more efficiently and providing financing for an improved agricultural system.

Currently, market dynamics do not fully take into account the negative environmental and economic externalities of agricultural production. However, there are opportunities to use a suite of drivers to reduce nutrient loss, improve soil health, and shift to a more regenerative agriculture in the region. Market-oriented mechanisms can be utilized to realign the public and private benefits from agriculture. In a 2017 report, Delta Institute examined a range of example mechanism and initiatives, which are designed for a range of stakeholders such as capital markets, investors, supply chains, states and municipalities, and producers. There is always an interplay between drivers in a globally connected marketplace, and we focus on the approaches that could have a measurable impact in the Midwest as well as broader transformation of agriculture to a regenerative system. Not to be overlooked is the role policy makers play in supporting the shift.

The **advocacy** section of this report will provide an overview of policy priorities.

WHO OWNS THE LAND?

Barriers to implementation of conservation practices and regenerative agriculture systems vary, however, land tenure and associated behavior are attributes that significantly impact land management decisions. Farm operators, non-operating landowners, government agencies, and investors face different barriers and motivating factors that affect adoption of conservation practices. Each group interfaces with the market through different pathways. To drive uptake of regenerative agriculture systems, we need to develop programs and policies that align with the needs and drivers of various ownership types and incentivize long-term investment in regenerative practices (1). With improved understanding of the barriers and opportunities associated with different land ownership classes, we design policies and programs using tools, like land valuation and leasing standards, as well as financing, lending, and risk mitigation structures that create lasting conservation incentives (2-5). Implementing these policies and programs will achieve measurable improvements in soil and water health, and provide economic stability for farmers while increasing farmers' resilience to climate change. Strategies that link soil health and carbon to implementation of regenerative agriculture practices are outlined in Delta Institute's 2018 report, Getting down to the Roots: a Soil Carbon Strategy for Illinois.

HOW MUCH IS LAND WORTH?

While intrinsic characteristics of soil properties play a significant role in determining its value, recent advances in agronomic sciences have shed more light on the relationship between soil productivity, management of the land, and associated profitability of the farming operation. Yet, most policies and guidelines related to appraisal and assessment of farmland assume that soil productivity is static. Furthermore, a barrier to investment into conservation is that soil improvements are not reflected in the value of their land. To incentivize landowners, especially institutional landowners, to adopt regenerative agriculture practices on their land, Delta Institute is exploring and developing strategies to link land value and soil health management.

The **land value** section of this report discusses connections between land value and soil health in more detail.

CONSERVATION LEASING FOR THE PUBLIC GOOD

In addition to millions of acres of privately-owned cropland, state agencies and local jurisdictions lease public land for agricultural activities. There is nearly 100,000 acres of agricultural land held by public agencies, such as the Department of Natural Resources (DNR) and County Forest Preserve Districts, in Illinois alone. For states across the Midwest, public lands and policies that guide their management can set a strong standard for conservation. These lands can also be used as a laboratory for innovation and adoption of regenerative agricultural systems. Although much of Delta Institute's recent work highlighted in this report focuses on the state of Illinois, lessons from the Prairie State that bring public sector investment into the agriculture sector can be applied in other states across the Midwest and beyond.

This report compiles **tools and resources** to help public land managers incentivize implementation of conservation practices by farmers who lease the land.

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LAND VALUE

In this section, we describe the current agricultural land valuation system and highlight opportunities to explicitly link soil health focused management and land value.

For landowners, the value of their land can be a critical factor in deciding how their land is managed. Incorporating soil health and quality into the valuation process can serve as a critical pathway to transition to regenerative agriculture if it leads to increased value. However, currently, changes in soil quality due to management are not factored in land value which means that managers have no incentive to invest resources in practices that increase soil quality. This section provides background on the current land valuation system and briefly describes interventions that could drive the market to change its relationship to the land through financial incentives.

Delta Institute's goal is to promote changes in land management that improve soil and water resources, make the land more resilient to extreme weather conditions, and increase the profitability of farm operations. Landowners care about property values, however, a typical process for determining how much agricultural land is worth does not account for either soil health benefits, nor the reduced expenses associated with different management systems.

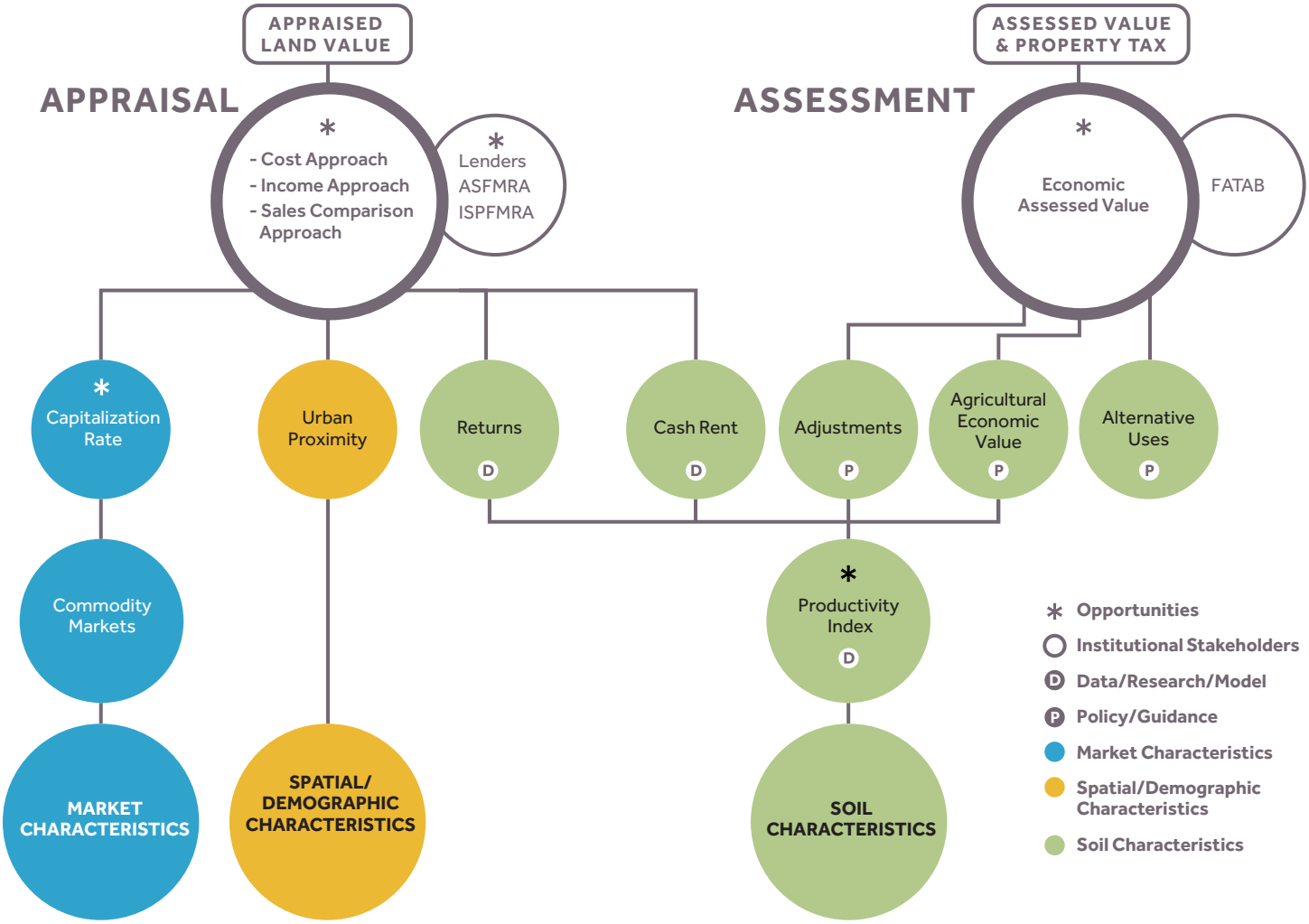
A farmland appraisal report might reference soil productivity as a static number and use it as a way to estimate income from the land to determine its value.

Most commonly, sales comparisons are used to determine the value of the property (6). This approach, while allowing the appraiser to make adjustments based on soil properties, location, and market trends, doesn't capture the increased value of the land resulting from alternative management (such as regenerative agriculture) since there may not be any properties like that qualifying for comparison.

Although the drivers and motivations related to making land management decisions differ for landowners depending on demographics, ownership class, and a number of other cultural factors, all landowners care about the value of their land (7).

Delta Institute set out to better understand the entities, processes, and relationships of the land valuation system in the agricultural sector including policies, institutions, and processes that are connected to land valuation. The land valuation system map is shown in the figure below and described in the following pages. It focuses on two processes, appraisal and assessment. Each node in the map depicts key actors, policies, and information flows determining how much land is worth. The opportunities to incorporate linkages to soil health are also highlighted. An interactive map detailing opportunities for interventions and system descriptions is also available.

CURRENT LAND VALUATION SYSTEM



Trends in sales of comparable properties, capitalization rates, and commodity prices impact land value. They are important to consider though may be outside of the immediate control of the local real estate market.

Much of the land valuation process and appraisal rests on finding comparable land sales and properties in the vicinity. Therefore, it is important to understand how location and associated land uses in the area impact land value.

Physical, chemical, and biological properties of the soil have a direct impact on its productivity and the associated income that can be derived from the land. Soil characteristics, therefore, play an important role in land valuation process.

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APPRAISALS

Appraisal is a key process used for determining property value during a sale. Appraisals may be conducted by third party independent appraisers, as well as internally by lenders, or real estate departments within farm management companies. The process used for determining property value typically consists of 3 approaches - cost, income, and comparables. Reconciliation of the three estimates with "appropriate" weight assigned to them is based on availability of data and comparables to derive the final value of a farmland parcel in the appraisal.

Cost approach: Based on estimating how much it would cost to construct an equally desirable substitute property. While this approach is most applicable to physical structures, like barns or outbuildings, it is less relevant for soils.

Income capitalization approach: Based on the idea that present value is indicated by future benefits such as rental income (leases) or production income (owner-operators). The capitalization of net income can be based on direct (single year) or yield (future set period) capitalization. Collecting income data is time intensive and is typically based on rental income. Capitalization rates are hard to determine.

Sales comparison approach: Appraisers identify 5-10 comparable properties sold in the vicinity and determine the value of the land based on those sales. Adjustments can be made by looking at pairs of properties to estimate value of particular improvements or features of the property (e.g. dwelling, grain bin, tile drainage). This is a cyclical process that amounts to a slow moving average of land values in the area. Currently, improvements that are typically considered are structural in nature.

Few operations in Illinois have adopted conservation or soil health management systems, and there is no good database of comparable parcels and adjustments based on soil improvements related to conservation focused management.

ASSESSMENTS

The productivity of the land and its associated value is also used to assess the taxes paid on the property. In Illinois, agricultural land is assessed based on its use value, the Agricultural Economic Value (AEV). Then, the Equalized Assessed Value (EAV) is calculated from the AEV for cropland, pasture, and other types of agricultural land as follows:

$$EAV_{cropland} = \frac{AEV}{3}$$

$$EAV_{pasture} = \frac{EAV_{cropland}}{3}$$

$$EAV_{other\ farmland} = \frac{EAV_{cropland}}{6}$$

The amount of property taxes paid by the landowner (or expected amount based county averages) is also used in the expense column of the income appraisal approach to determine the net income.

Increased land value due to improved management may lead to higher property taxes and create a disincentive for conservation. This can be avoided by also including tax credits for land owners who implement conservation practices. More broadly, assessment and appraisal values should be decoupled to avoid increasing taxes for healthier soils.

INSTITUTIONAL STAKEHOLDERS

Key players within the land valuation system represent the financial sector and professional trade organizations in the field of rural land management. National organizations such as American Society of Farm Managers and Rural Appraisers (ASFMRA) and the Appraisal Institute create guidelines for and certify appraisers. At the state level, the Illinois Society of Professional Farm Managers and Rural Appraisers collects, analyzes, and aggregates data annually and provides info to members on trends in land sales and leases across the state. In addition, banks often conduct appraisals internally along with applications for operating loans. Engaging lending institutions, farm managers, and appraisers to then work with them on developing and implementing strategies that incorporate soil health focused management into land valuation will be critical.

For the assessment process, another key institutional stakeholder is the Farmland Assessment Technical Advisory Board (FATAB). FATAB is a five-person appointed panel created to advise in and provide technical information in the calculation of agricultural economic value as well as to publish its estimates of gross income and production costs.

MANAGEMENT

Management of the land impacts biological and chemical characteristics of the soil, which are dynamic, and in turn, affect soil health and productivity. Managing for soil health, i.e. improved soil function, is a matter of maintaining a suitable environment for the myriad of living organisms that comprise the soil food web. Key principles of soil health management are: disturbing the soil as little as possible; growing as many different species of plants as practical; keeping living plants in the soil as often as possible; and keeping the soil covered. With changes in management, soils can be either degraded or improved, and those changes are rarely, if ever, captured by soil databases and related indices (7).

Many farmers get their soil tested to determine available nutrients, organic matter, pH, and more, using recently available soil-health focused tests. Given availability of such soil tests, it is possible to create a more dynamic representation of soils in national and state databases. Additionally, given that land value is connected to the productivity defined by these databases, creating the needed feedback-loops between these systems should be a priority.

Prior to highlighting interventions and opportunities for action that can be explored to link soil health and land value, the sections below describe components of the current land valuation system and key factors that drive the valuation processes. The nodes on the map capture high level factors (e.g. soil characteristics, markets, and demographics) that influence agricultural property values as well as specific policy frameworks and data sets that serve as inputs to determine the value of the land.

SOIL CHARACTERISTICS

Physical, chemical, and biological properties of the soil have a direct impact on its productivity and the associated income that can be derived from the land. Soil properties and associated classifications, therefore, play an important role in land valuation process. Currently, soil classifications are taken to be static properties. USDA - The Natural Resources Conservation Service Web Soil Survey tool provides information about soils for 95% of nation's counties online. Such information serves as a basis for numerous other parameters associated with soil productivity.

Productivity index (PI)

In Illinois, soil properties are used to determine productivity indices that are used in land appraisals and property tax assessments. The productivity indices are documented in Bulletin 810 and Bulletin 811 for average and optimum management, respectively. Bulletin 810 shows the average 1990s yields of various grain, forage, and tree crops for Illinois soil types under an average level of management. Productivity indices are given for the various soils. The bulletin also outlines a method of adjusting both yields and productivity indices for slope and erosion. In Bulletin 811, for the optimum level of management, the crop yields that were achieved by the top 16% of farmers in Illinois in the 1990s are used. These 10-year average crop yields under an optimum level of management for most soils are taken to equal approximately 1 standard deviation (SD) above mean crop yields of all farmers in Illinois.

Today's productivity indices are based on historical averages and don't allow for adjustments based on current management systems and associated changes in soil characteristics.

MARKET CHARACTERISTICS

Market dynamics are important drivers of land value - trends in sales, comparable properties, capitalization rates, and commodity prices impact what a buyer or an investor would be willing to pay for the land. Many of these factors are outside of the immediate control of the local real estate market, however, they are important to consider.

Commodity prices

Trends in commodity prices provide signals to institutions in the agricultural and real estate sectors that inform projections for cash rent rates. Commodity prices also go into determining revenue from crops grown and associated income from the land, which is a variable that goes into determining land value.

Capitalization rate (related to market conditions)

Defined as net operating income divided by the property asset value, the capitalization rate is used in the income approach of the appraisal process to estimate the property value. The capitalization rate is a reflection of current commodity markets and market cash rental rates. The capitalization rate is indicative of the return on the investment. A typical capitalization rate can be somewhere between 3-6%.

SPATIAL AND DEMOGRAPHIC CHARACTERISTICS

Location of the land along with demographic characteristics of the area influence the value of the land. Much of the land valuation process and appraisal rests on finding comparable land sales and properties in the vicinity. Therefore, it's important to understand and consider how location and associated land uses in the area impact land value.

Urban proximity

Proximity to urban centers impacts land value because there is often development pressure. Also, being close to densely populated areas could be an access point for markets and infrastructure needed to process and sell crops.

After soil productivity, distance to Chicago is the second leading determinant of farmland prices in Illinois. Similar effect is noted for land near St. Louis. However, starting in 2006 valuation influence from proximity to St. Louis began to diminish (8).

DATA USED IN LAND VALUATION PROCESS

Cash rent (function of PI)

Cash rent is used to estimate farm income in the appraisal process. Cash rent is the most common lease payment arrangement in Illinois. Annually, University of Illinois Extension provides projections for average cash rent rates, which are empirically linked to the productivity index. The formula is derived by relating previous year's average county cash rent values to county average productivity index and adjusted based for expected market trends and geography.

Returns (function of PI)

While typically cash rent is used to determine income derived from the land, returns based on production data (soil types, commodity prices, yields, etc.) can also be used. However, the data, if available, is based on county averages or typical crop budgets and doesn't reflect actual profitability of the land and differences in input costs and revenue based on different management practices.

Agricultural Economic Value (AEV) (function of PI)

Specified by the Property Tax Code of Illinois, the AEV is defined as the difference between gross income and production costs divided by the capitalization rate, r. Illinois sets the rate to be the 5 year average of Federal Land Bank mortgage interest rate. This calculated capitalization rate is utilized in the assessment process.

Adjustment factors (function of PI)

Adjustment factors allow for modifications of the PI of the assessed land based on the following: slope and erosion (adjust the PI that goes into determining value); flooding (adjust PI based on Bulletin 810 recommendations, site specific, recomputed annually); drainage district assessments; soil inclusions, droughty soil, and ponding (accounted for in long-term yield averages), that are only used in unusual conditions.

Alternative uses (related to management)

If the parcel/field includes land for other than agricultural use as defined in the Property Tax Code, the following alternative uses can be added and used in the determination of the assessed value. These include: roads; waterways (creeks, streams, rivers, drainage ditches, ponds, borrow pits); grassed waterways and windbreaks; power lines; lanes and non-dedicated roads; land under an approved forestry management plan; vegetative filter strips (assessed as 1/6 of PI of cropland, except in Cook County); Christmas tree production; land in the Conservation Reserve Program or the Conservation Reserve Enhancement Program; horse boarding and training facilities; tree nurseries; greenhouse property; wildlife farming; fish farming; compost sites; and sewage sludge disposal sites.

STRATEGIES FOR ACTION

Delta's investigation into the main land valuation mechanisms revealed multiple, interconnected variables. Our research and community engagement around land value highlighted nine opportunities that could re-align the ways that land is valued and transacted that would do a better job at internalizing soil health and provide incentives for building, instead of degrading soil. Additionally, we identified the critical stakeholders that could influence these changes.

The interventions can be grouped into two main categories, technical and social. The agricultural land market is still a marketplace that brings together buyers and sellers around transactions of land, and is in need of updated data and models to better integrate soil health into these transactions. Targeted engagement, relationship, and trust building will also be needed to shift the dynamics of the system.

With a fuller understanding of how agricultural land is valued, we are able to identify strategies for explicitly incorporating soil health's contributions to land value. The recommendations for action and opportunities are outlined in the following pages and identified on the system map.

Updating Appraisal Guidelines & Educating Appraisers

Institutions such as the Appraisal Institute and ASFMRA publish guidelines that certified appraisers use in their valuation of rural property. There is an opportunity to amend, update, or develop new guidelines that give appraisers the technical ability and tools to more fully integrate the connections between underlying soil characteristics, management, and land value. AFSMRA offers continuing education credits, and a soil health focused curriculum could be developed for their membership.

An example can be taken from the green building industry where the US Department of Energy convened an industry-wide working group that created an "appraisal toolkit" that helps appraisers integrate the characteristics of green buildings into their appraisals. The same is needed for soil health focused agriculture.

Opportunity: Engagement with local, regional, and national land valuation professionals to understand how to include soil health factors into land valuation.

Outcome: Individual trust building relationships will be critical, as will regional gatherings, and the preparation and distribution of a toolkit that helps appraisal professionals adapt current processes to ones that incorporate soil health explicitly.

Sales Comparison Database

One of the biggest hindrances to incorporating soil health into land value is that farmers using these management practices are spatially disconnected, therefore when using the 'sales comparison' approach, any value that might be added on that farm would be negated by other farms that are engaging in more risky and (possibly) less profitable farming practices.

A database of farms using soil-health building conservation practices could be built, correcting for external factors (such as distance to urban areas), and be used to compare parcels to other parcels that are also using these techniques.

Opportunity: The analytics available from such an approach will allow for a broad evaluation of farms using similar practices and be able to make the case that in the absence of nearby comparable farms, such a database could be used as a proxy.

Outcome: Database containing management, respective soil health parameters from farmers, and geographic information for integration into the sales comparison approach of the appraisal.

Productivity Index - Soil Health and Dynamic Soil Mapping

While variants of the productivity index (PI) exist for average and optimum management, there is an opportunity to create a new management class that incorporates the management principles of soil health.

Soil classifications and related productivity indices that are used in national and state-wide assessments of agricultural land, such as the National Commodity Crop Productivity Index (NCCPI), built on the Soil Survey Geographic Database (SSURGO), and the Illinois specific Productivity Index (PI) are based on soil samples that are rarely updated.

With changes in management, soils can be degraded or regenerated, and those changes are rarely, if ever, captured by the soil databases and related indices. On the other hand, farmers get their soils tested to assess available nutrients, organic matter, pH and more recently a battery of soil-health focused parameters.

Given these soil tests, it is possible to create a more dynamic representation of soils in national and state databases, and given that land value is connected to the productivity defined by these databases, creating the needed feedback loops between these systems should be a priority.

Opportunity: Data products like this are prepared at a national level, at a state level, and by private agricultural companies. There are opportunities to work across all these providers to update their methodologies and incorporate more management specific information that is available from satellite data into their products.

Outcome: Revised datasets on productivity potential that are direct inputs to the appraisal process.

Integrating Soil Health Data into Illinois Land Value Reporting

The Illinois Society of Professional Farm Managers and Rural Appraisers reports annually on the state of rural farmland markets. The richness of these reports could be increased with the inclusion of state-wide data that related changes in land value to other state-wide issues of importance, such as indicators relating to the Illinois Nutrient Reduction Strategy, and the usage of conservation cropping practices, such as no-till, cover crops, and diversification.

Opportunity: The information provided to date only tells part of the story that is focused on short-term gains at the cost of long-term sustainability. While this is a hard message to tell to the agricultural community, it is important to highlight that there are also opportunities to shift management practices, increase profitability, and improve environmental outcomes.

Outcome: Systematic data collection and incorporation of information about management and respective soil health parameters from farmers into written and presented materials from this and other aligned professional organizations.

Lending Eligibility

Given current appraisal methodologies, a farmer who uses soil health management systems to improve soil on their farm is unlikely to receive a significantly different appraisal than a farmer that doesn't. Building soil should be considered as both, a form of farm equity and a way to reduce many agriculturally-related risks. Farm financial ratios used in loan underwriting adequately incorporate farmland value and the equity that could contributed by soil health, but they inadequately account for the changes in risk profile that the farms have, especially as related to resilience to extreme events.

Lenders and underwriters need the tools and education to incorporate both risk and value into their decision-making frameworks.

Opportunity: Engagement with the banking sector to illustrate the effects of soil health not only on farm profitability and land value, but also on the resilience of soil health focused farms to extreme events. New actuarially sound data will be needed to make progress on financial underwriting standards, but education for the sector will be imperative while those data are developed.

Outcome: Strategic engagement with agricultural banks and the identification of opportunities within the banking sector where the differentiated risks and returns, as related to both land value and overall farm profitability, can be integrated into financial decision making.

Income Capitalization Approach Reform

Currently, income approach is typically based on rental revenue or average yields for a given soil type and productivity (6). Expenses only incorporate taxes, insurance, and maintenance. However, income should reflect profitability of the land taking into account expenses associated with inputs such as fertilizer, pest control, and fuel. Data shows that cropping systems that implement soil building management practices observe increased net income because their input costs are reduced even if crop yield may decrease. Detailed data from landowners and potentially their tenants would be needed to determine the net income in this way.

Opportunity: As the agricultural industry shifts from a focus on yield maximization (at great environmental cost) to one of profit maximization, the enhanced profitability potential of soil health focused farms can be gathered and compiled to demonstrate the effects on land value from the income capitalization approach.

Outcome: Data about management and respective soil health parameters from farmers would be analyzed to demonstrate the viability of this approach.

Capitalization Rate Adjustment

Integrating the change in risk of an agricultural operation due to improvements in soil health can be reflected in several places on the balance sheet, but when investments in farmland are considered, the discount rate that is chosen poorly reflects the changes in risk and resiliency of improved soil health. In considering investments in agricultural land, the discounted cash flow analysis is commonly used. The discount rate chosen in that analysis does not currently reflect management effects on soil and the potential long-term impacts of poor management.

Investment professionals are in need of appropriate tools to assess investments in agricultural land and the effects of management on the degradation or regeneration of soils and its implications on investment decisions.

Opportunity: Identification and development of new data and models that illustrate the opportunity to change the discount rate for soil health focused farms and their long-term ability to maintain (or increase) value.

Outcome: New discounted cash flow models that are built with soil health focused correction factors and appraisal guidelines that use these updated discount rates in the income capitalization approach of the appraisal.

Tax Credits

Currently property taxes for agricultural land are assessed based on its agricultural economic value, which is a function of static productivity index values for a given soil type, its respective net income, and the capitalization rate. Illinois can create tax incentives to encourage practices that improve soil health and build soil carbon.

New York State is advancing legislation that could be used as a model for Illinois. The policy would provide tax credits for farmers for sequestering carbon on their farms.

Opportunity: An updated productivity index (see above) would be needed to change the way land is taxed. The provision of public goods (clean water, stored carbon, biodiversity) and associated quantification could also be used to develop tax incentives.

Outcome: Engaging the relevant tax authorities or legislatives processes about the steps to incorporate such changes into tax laws, and the further provision of data, constituent support, and model law changes that could be put into effect.

Property Assessed Conservation Agriculture Financing

Incorporating lessons learned from the energy sector, novel financing strategies can be applied to the agricultural space to help finance upfront costs to transition to more soil-health focused management systems.

As an example, Property Assessed Clean Energy (PACE) financing is a tool that can be used to finance building energy efficiency upgrades, where the loans for improvements are repaid through annual property tax bills. Bonds are used to securitize the loans for sale to investors. A similar approach can be utilized in agriculture.

Opportunity: This innovative financial structure is used in several states to promote energy efficiency and renewable energy generation. There have been controversies in several states, which has slowed the adoption of this approach.

Outcome: Careful study of existing PACE financing models and engagement with PACE financing professionals to gauge the applicability of this model to the transition to a more soil health focused agricultural system.

RECOMMENDATIONS FOR ACTION

- Update Appraisal Guidelines & Educate Appraisers
- Develop a Sales Comparison Database
- Create a Dynamic Productivity Index
- Integrate Soil Health Data Into Illinois Land Value Reporting
- Utilize Lending Eligibility Criteria
- Reform Income Capitalization Approach
- Integrate Risk Adjustment into Discount Rates
- Provide Tax Incentives
- Adapt Pace-Type Financing Models

Land value, especially if linked to soil health, can be an important factor in driving management decisions that would result in improvements in soil health and the value of the land. The current system that determines how land is values is complex with many interconnected variables and actors, yet does not explicitly connect soil health to value. After our analysis and research, we identified opportunities that focus on ways to catalyze change in this system from multiple perspectives, including working with stakeholders within the financial sector as well as policy makers. Delta Institute is starting to work with partners on implementing some of the recommended strategies listed above.

LAND MANAGEMENT THROUGH LEASING

This section provides a snapshot of public farmland in Illinois and how it is currently managed. The information sheds light on the existing challenges and informs strategies for working with public institutional landowners to improve farmland management through their leasing programs.

For landowners who don't farm the land themselves (private individuals, investors, institutions, etc.), an important lever that can be used to incentivize conservation is the lease agreement between landowner and farmer tenant. The lease agreement can be used to spell out management practices and responsibilities landowners and operators have to implement them (1, 2, 9, 10). Many lease agreements between individuals are handshake deals with little room for negotiation.

In addition to legal protections, what these "handshake deals" lack is the latest information and tools that integrate innovations in conservation, risk sharing, and other market and non-market dynamics.

Furthermore, the majority of the agreements are only one year in length, making land tenure security a key barrier to long term investment. Institutions that own land and lease it for farming, however, have an opportunity to use their written legal agreements to advance conservation and soil health. Within the public sector in particular, land that is managed for the public good can be a catalyst for a regenerative agriculture transition. The conservation leasing infrastructure and practices discussed here can be applied to many institutional and private landowners with minor adjustments.

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PUBLIC LAND

In Illinois, over 80,000 acres of publicly held land is leased for agricultural use by state agencies, such as the Illinois Department of Natural Resources and county Forest Preserve Districts. However, for such agencies and their staff members charged with managing the working lands programs, they are typically not a priority due to lack of agricultural expertise, staff capacity, or other barriers. Yet, these agencies have a unique opportunity to take a leadership role in transforming farmland management through an approach that considers the land's value as a natural resource and supports regenerative food systems.

While publicly owned land accounts for only a small fraction of the total farm land in Illinois, local, state, and federal government agencies can work together to develop policies and programs that treat farmland as an investment and set the tone for the rest of the state to transform agriculture resulting in positive environmental, economic, and social outcomes. This approach to farmland management can support restoration and protection of natural resources through generated lease revenue, support local food production, rebuild soils, and improve habitat and water quality. Furthermore, a transition to regenerative agriculture led by the public agencies can catalyze wider adoption of conservation practices on private land by showcasing their benefits.

Delta Institute inventoried public land and associated agricultural lease programs across the state of Illinois. The inventory identified challenges and opportunities currently facing public managers. This understanding informed the design of tools and resources for land managers as well as statewide policies to support long-term investment on working lands owned by public agencies outlined in the tools section of this report.

FARMING ON PUBLIC LAND IN ILLINOIS

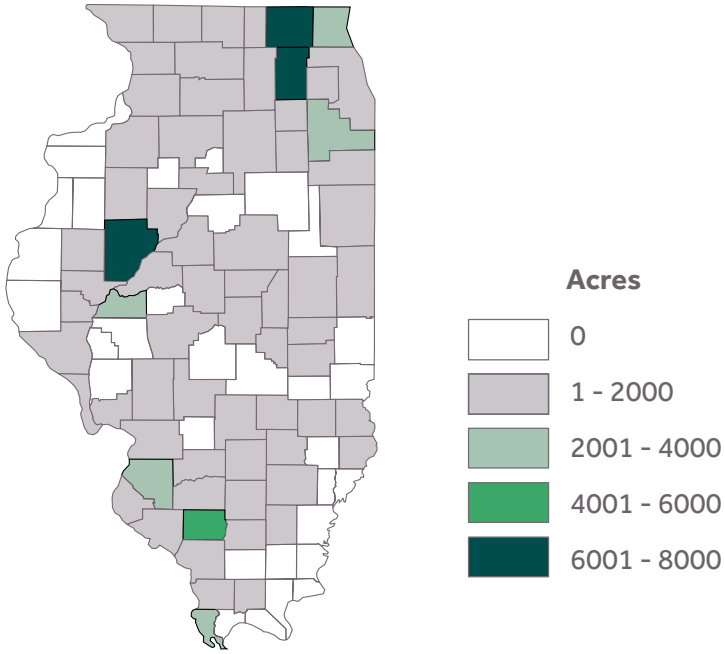
While publicly-owned land accounts for only a small fraction of the total farmland in Illinois, government agencies can work together to develop policies and programs that treat farmland as an investment. This would encourage transformation of agriculture across the state, resulting in positive environmental, economic, and social outcomes. A conservation focused approach to farmland management can support restoration and protection of natural resources through generated lease revenue, support local food production, rebuild soils, and improve habitat and water quality. Additionally, a transition model led by public agencies can lead to wider adoption of conservation practices on private land as well.

Understanding current farmland leasing programs allows us to consider relevant changes to the program and how to structure a lease agreement to improve land management. The process of utilizing public contracts has influenced private sector adoption in other environmental areas such as recycled paper requirements.

Acres of Public Lands Leased for Agriculture

Public Agency	Acres
Township Leased Lands	452
DOA Leased Lands	1,574
Utility Leased Lands	5,375
County Leased Lands	24,574
DNR Leased Lands	32,485
University of Illinois	16,000
TOTAL	**80,460**

Note: University of Illinois acres not shown on map;
DOA: Department of Agriculture;
DNR: Department of Natural Resources



Lease Term

Land tenure security through longer lease terms is critical in enabling long term investment into conservation.

1-2 Year Lease Term: 7 Organizations

3-6 Year Lease Term: 10 Organizations

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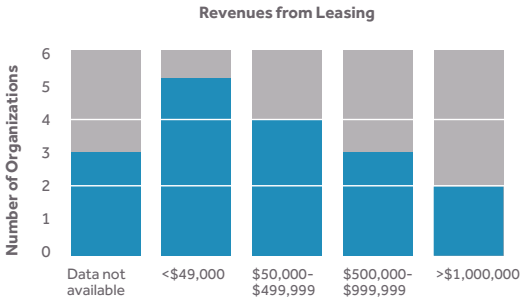
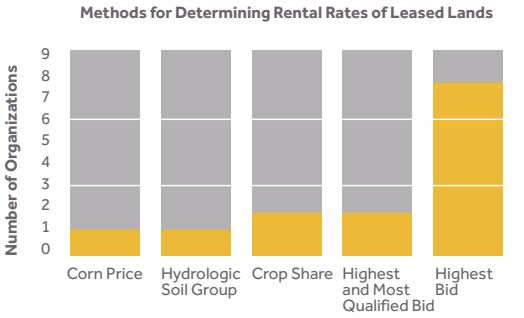


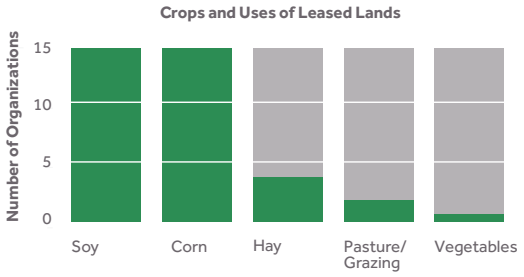
Revenue

Revenue generated through the organization's agricultural holdings and how it is used is an important factor that impacts the organization's ability to change lease rates.



Lease Rental Rate

The lease rental rate and how it is determined has an impact on program revenue and can be used to incentivize conservation practices.

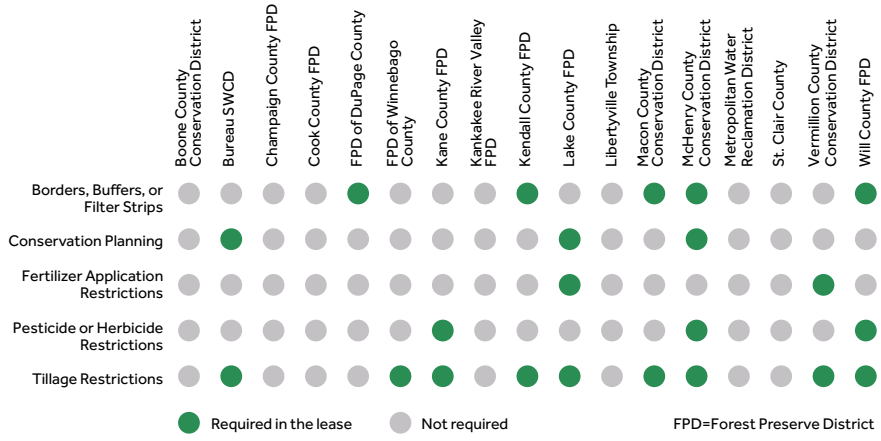


Crop rotations

Diverse crop rotations and land cover are key principles of regenerative agriculture and are imperative components in building soil health.

Best Management Practices

The most direct way to ensure conservation on the land is to include conservation practice requirements in the lease agreement.



KEY FINDINGS

- There are weak governance frameworks for farmland management across organizations surveyed due to perceived misalignment with agency mission and limited capacity. Some agencies have an ordinance or a written policy that guides agricultural land management.
- The financial and lease rate structures are not aligned with conservation. The generated revenue from leases often supports general operating expenses rather than natural resource programs.
- Bidding procurement process reduces the ability to negotiate rates that reflect conservation implementation.
- Farmers are considered non-traditional partners. Working effectively with them requires long term investment into additional capacity to establish and maintain such relationships.

County level acreage and additional details about public farmland management can be viewed through an interactive infographic available here.

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RECOMMENDATIONS FOR ACTION

- Enhance program governance, build capacity, and provide educational resources for agencies by developing shared principles and policies to guide land management; improve transparency by establishing data tracking methods and evaluation.
- Mitigate risk associated with adopting new practices by reforming farm leases, developing strong technical assistance offerings for farmers, and leveraging partnerships with local agriculture focused organizations.
- Advocate for policy changes that enable public-sector land managers to change their farmland leasing programs to ones that internalize the costs and benefits of different farming systems, innovate management, and enhance public benefits.

The full report about public farmland in Illinois is available here. Based on the inventory findings and feedback from stakeholders used to compile the information for the inventory, we developed a suite of tools and resources for ensuring the leased farmland is managed in a conservation focused manner. The tools are outlined in the next chapter.

The **tools** section of this report will provide details on how land managed for public good can be a catalyst for regeneration.

The **advocacy** section of this report will provide an overview of policy priorities.

FARMLAND LEASING TOOLS

This section provides tools and resources for land managers to overcome various barriers associated with implementing farmland leasing programs. The tools include items that help improve governance, build capacity, and enable technical robustness of the program. They can be used in concert with each other by organizations looking to re-envision their farmland management completely or individually to improve components of the program taking into account existing constraints. This section also includes a number of informational resources that can be utilized by the public agencies.

WHY REGENERATIVE AGRICULTURE?

Public agencies that own farmland, often find it challenging to align agricultural land management with their conservation missions. Adopting regenerative agriculture principles and practices allows public agencies to manage their farmland in a way that closely mimics a natural system, while also producing food for people, and providing other valuable natural amenities. This approach can keep the operation profitable, build natural capital, and generate financial returns due to increased resilience and decreased use of inputs such as fertilizer and pesticides.

To use regenerative agriculture as a system to manage farmland, it is important to ensure that land managers and decision makers understand the key principles of regenerative agriculture. Though several definitions have been developed, they are all based on the idea that soil is a living, functioning system. Managing land for soil health is a critical component of regenerative agriculture. Basic principles of regenerative agriculture are outlined in the factsheet in the following pages of the report. The factsheet can be utilized to build a shared understanding and broad support for adopting regenerative agriculture principles.

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FACTSHEET: REGENERATIVE AGRICULTURE

Resources for Illinois Public Agencies

Across Illinois, most of our farmland is losing invaluable topsoil and contributing to nutrient pollution in our waterways. Public agencies, such as forest preserve districts and conservation districts, can improve soil health of their farmland holdings through land stewardship practices. Though these agencies exist to protect and restore natural lands, their conservation efforts are primarily focused on habitat management but not farmland practices. For those tasked with farmland management within public agencies, this document provides a brief overview of an approach to farmland management through regenerative agriculture.

Strategy for Soil Health

Public agencies can use regenerative agriculture to improve stewardship of their land. Regenerative agriculture represents a way of thinking about soil improvement that benefits both the farmer and the environment. This farming system includes the integration of the following practices and principles, which can be implemented in a phased approach over time to maximize soil health, water quality, habitat benefits and minimize risk:

1. **Minimizing soil disturbance** by practicing no-till or reduced tillage can reduce erosion and mitigate extreme weather. Reducing disturbance allows microbial communities and fungi to grow untouched, thereby improving soil aggregation and water holding capacity.
2. **Keeping soil covered** using cover crops to keep soil covered for as much of the year as possible. Soil cover can decrease erosion and fertilizer needs by improving residue retention and adding soil organic carbon and nutrients to the soil.
3. **Diversifying rotations** by adding additional crops to rotation can reduce costs for pest control, mitigate extreme weather and has the added benefit of diversifying income. Increasing diversity avoids depleting soils of nutrients while improving resistance to pests and diseases.
4. **Integrating livestock** in order to graze cover crops and perennial crops in the rotation, restore on-farm nutrient cycles, and further diversify income.

STARTING THE TRANSITION

Public agencies can facilitate the gradual transition to regenerative agriculture through building partnerships with agricultural stakeholders and adopting farmland management policies and programs that align with their conservation goals. While public agencies seek to improve soil health, their tenants will need time and financial stability to determine how best to change their practices and implement them. Informing farmers about the benefits of regenerative agriculture other farmers have experienced will further support the transition.

More resources on regenerative agriculture and improving soil health are available here.

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PROGRAM PRINCIPLES

Organizations that preserve and manage natural resources (public agencies, land trusts), typically adopt a land acquisition policy and a procurement policy, however, many do not adopt policy or principles guiding farmland management decisions. Management of agricultural land should be driven by principles that reflect the goals of the organization and guide management decisions. Adopting farmland management principles or policies improves organizational transparency creating clear guidelines for tenant selection, budgeting, and reporting to constituents or other stakeholders. These are typically high-level, goal setting documents that allow for flexibility while referencing procedures that outline the operation of the program in detail. Organizations developing guidance principles should consider including goals that align with other priorities, such as:

- Conservation-focused or regenerative agriculture farmland management
- Equity in land access
- Partnerships that enable innovation
- Other goals, such as working with first-generation farmers or veterans, that may be priorities for the organization

We provide a template that outlines key farmland management principles to be used as starting point when working toward adopting organizational or regional principles. This template can help formalize commitments to conservation and create transparent governance structures for regenerative farmland management programs on public land.

TEMPLATE: PROGRAM PRINCIPLES

Natural resource agencies such as forest preserve districts and conservation districts are responsible for the ecological integrity of their land and are tasked with actively conserving, restoring and managing their natural resources, including populations of native species and their habitats. In addition to natural resource conservation, these agencies provide education, recreation and cultural opportunities.

Urban development in Illinois has converted a once predominantly agricultural and natural landscape into a mosaic of suburban and urban developments mixed with agricultural and remnant natural areas. **Many parcels of land, when acquired by agencies, are in agricultural production and often remain in agricultural production in the long-term. Continued agricultural use of the parcel is often an economically-driven management strategy for the agency that can be integrated into agencies' natural area management plans.**

It is in the agencies' best interest to **establish a Farmland Management Program (Program) that ensures protection of natural resources** by buffering adjoining natural areas, providing open space, reducing impacts to local water resources, and implementing regenerative farmland management. Enrollment of tracts in the Program could **generate revenue for the agencies to support restoration efforts as well as integration of farmland tracts into a cohesive natural areas management plan.** This will ensure that natural resources are not degraded while preparing the land for eventual restoration. The Program will also **contribute to the local agricultural economy.**

The Farm Management Principles (Principles) **establish Program goals (identified below) that will collectively guide those agencies with farmland** holdings to ensure that the farmland is managed in line with conservation mission of the agency, i.e. by supporting practices that build soil health and promote ecological diversity. Agencies that adopt the Principles will implement it in accordance with each agency's rules and procedures.

GOAL 1

Implementation of farmland management that conserve natural resources through:

- **Conservation measures:** Include conservation requirements in the lease, which would include conservation plans, pesticide use restrictions, buffers, tillage restrictions as well as additional requirements based on resource concerns identified in the conservation plans (e.g. cover crops, grassed waterways, diversification, etc.)
- **Farm license agreement and documentation:** Make the term of the lease between 3-5 years (longer where appropriate) to encourage conservation investments and provide a standard data form to help track progress toward conservation outcomes; include other conservation focused provisions in the license agreements.
- **Farm license termination:** Allow for early termination of licenses in case there are plans to restore land to natural areas or for not complying with the terms of the lease.
- **Farmland management/natural resources fund:** Revenue from farm licenses should go to a dedicated fund that goes toward natural resource restoration projects and farm management (e.g. soil testing, farm management staff, etc.) and pooled for shared services related to farmland maintenance and management.

GOAL 2

Provide equitable access to leased land

- **Public bid process:** Implement a fair and public bid process to award agreements; allow some flexibility to award bids to farmers who may not be the highest bidders, but are committing to implement conservation practices.
- **Land acquired with existing lease:** Provide a fair course of action for tenants with existing leases on acquired land.

GOAL 3

Build partnerships that enable innovation and transition to conservation focused management of farmland

- **Monitoring and verification:** Develop a framework to track implementation of conservation activities, assess progress, and report to the board; utilize data collected through the lease supplement; meet with tenants regularly to discuss management options and provide technical assistance.
- **Technical assistance:** In line with the education mission of the agency, develop programs that offer technical assistance and peer learning via workshops, demonstration farms, dedicated agronomy staff, etc.

TRACKING PROGRESS

Data collection and analysis is an integral part of managing a farmland leasing program, as it can strengthen current management decisions, communicate progress towards conservation goals, and inform strategies for the eventual restoration of farmland. Often public agencies have extensive datasets related to habitat and wildlife surveys, however, tracking farmland information requires some planning.

It is helpful to define specific management categories that are important to the organization and identify measurable or verifiable metrics that will evaluate the management category in question. One challenge is prioritizing those categories and deciding on a reasonable number of metrics to use based on availability of data, administrative burden, cost, and ability to detect meaningful changes. Another challenge is integrating agronomic and ecological metrics to evaluate more holistically if natural resource protection goals are being achieved. Finally, an important consideration in setting up a data management system is deciding who generates, collects, stores, and analyzes the data.

Below, we outline categories of data that are important to consider when developing a data tracking framework. This section also includes an example of a model for data tracking developed by McHenry County Conservation District, called the Agriculture Conservation Index. The process and rationale for the Index are spotlighted at the end this section.

FRAMEWORK: DATA TRACKING

USEFUL CATEGORIES TO CONSIDER ARE LISTED BELOW:

Nutrient management

It is useful to distinguish between planning and implementation in this category. Having a plan doesn't guarantee that it will be followed, but having a plan is an important step in considering the application of fertilizers on the land. It might also be easier to verify and manage administratively.

Soil testing

There are several factors that can be used to assess implementation of soil testing and its effect on soil:

- Determining which kind of soil testing to conduct;
- Conducting the soil testing;
- Implementing different management practices in response to soil test results.

Cropping system

- This category can be used to evaluate the diversity of crop rotations and ground cover.
- Best management practices
- If a program requires specific conservation practices to be implemented, this category can evaluate the compliance - for example, buffer strips.

Habitat

For natural resource organizations, this will be one of the most important categories to think about. Depending on the organization's priorities, management activities can include: quantity and quality of in-field habitat; pesticide-use planning; and actual pesticide application.

DATA TRACKING MODEL: AGRICULTURAL CONSERVATION INDEX

		0	1	2
NUTRIENT MANAGEMENT	Fertilizer Application Planning	No plan		Nutrient Management Plan developed and kept updated
	Fertilizer Application	Fall application	Nutrients added immediately before or during the growing season	4R plan (or equivalent) implemented annually
SOIL TESTING	Soil Testing frequency and farmer interaction	No soil tests	Cornell Soil Health Test Baseline established	Farmer and MCCD review Cornell Soil Health Test
	Advanced Soil Testing (Biological)	Cornell Soil Health Test Overall Quality Score 0-20	Cornell Soil Health Test Overall Quality Score 20-40	Cornell Soil Health Test Overall Quality Score 40-60
	Responses to Soil Testing	Soil test results not informing management	Implement at least one practice in response to soil test results	Implement at least two practices in response to soil test results
CROPPING SYSTEMS	Residue Cover (June 1st-15th)	Low: <20%		Medium: 20-60%
	Crop Rotations	Continuous (example: corn/corn)	Two crop rotation (example: corn/soybeans)	
	Cover Crops - Implementation	No plan	Conservation plan guidelines followed	Cover crops on HEL ground
	Cover Crops - Diversity	No cover crops	Single species	Multi species
BMPs	Grassed Filter Strip	No filter strip or doesn't meet specifications	Filter strip meets specifications (30 ft -65 ft next to high quality stream)	Filter strips maintained to spec annually
HABITAT	In-field Habitat (not relevant)	Vegetation not suitable for wildlife habitat	Field includes filter strip, field border, or grassy waterway	Establish in-field habitat
	In-field Habitat	No habitat	At least 10% of field acres is permanent habitat, could be around the edges	Manage field for hay
	Pesticide Use - Planning (any chemical sprayed on fields for bugs or weeds or fungus control)	No records	Keep records of pesticide / herbicide application on each field/ proof of license	Develop a plan to reduce movement of pesticide by either: 1) Enlist field(s) in DriftWatch 2) communicate sensitive times to avoid spraying with neighboring farms, or 3) develop mitigation plan that reduces movement of pesticide
	Pesticide Use - Implementation (any chemical sprayed on fields for bugs or weeds or fungus control)	Not following management plan restrictions	Use contact/selective herbicides (meet requirements of the management plan)	Implement practices that reduce movement of pesticide

3	4		
	4R plan completed updated annually OR Crop consultant deems that no plan is needed	Fertilizer Application Planning	NUTRIENT MANAGEMENT
Variable rate application	No synthetic fertilizer used	Fertilizer Application	
Develop a conservation plan based on soil health test results		Soil Testing frequency and farmer interaction	SOIL TESTING
Cornell Soil Health Test Overall Quality Score 60-80	Cornell Soil Health Test Overall Quality Score 80-100	Advanced Soil Testing (Biological)	
Implement at least three practices in response to soil test results	Implement all management changes in response to soil test recommendations	Responses to Soil Testing	
	High: >60%	Residue Cover (June 1st-15th)	CROPPING SYSTEMS
Three or more crops in rotation (example: corn/soybeans/wheat)	Perennial cropping system	Crop Rotations	
Cover crops on NHEL ground	Grazing cover crops	Cover Crops - Implementation	
Multi species with a legume	Implementing cover crops (any mix) AND planting green	Cover Crops - Diversity	
		Grassed Filter Strip	BMPs
Establish in-field habitat with non-native cover	Establish in-field habitat with native cover	In-field Habitat (not relevant)	HABITAT
Manage hay field for late cutting	Implement permanent cover or pasture	In-field Habitat	
Develop an Integrated Pest Management plan utilizing less persistent/toxic for habitat (pollinators, aquatic life) Implement the IPM plan	Planning for Organic Certification	Pesticide Use - Planning (any chemical sprayed on fields for bugs or weeds or fungus control)	
	Eliminate pesticide use or Organic certification	Pesticide Use - Implementation (any chemical sprayed on fields for bugs or weeds or fungus control)	

BUILDING CAPACITY

A successful program needs staff with the right skill sets and time availability. For natural resource agencies, agronomy typically falls outside most employees' existing expertise. As such, increasing staff capacity will allow agencies to work better with farmers and the agricultural community. Yet, many organizations don't have the budget to hire additional staff, especially if agricultural land is a small portion of their overall land holdings. In addition to leveraging relationships with conservation and agricultural organizations, such as the Natural Resource Conservation Service, Soil and Water Conservation Districts, or County Extension Agents, agencies can consider utilizing a cooperative service model for a farm manager position shared by organizations working in the same locality.

Below is a list of decision points and questions to consider when thinking about how to structure such a position:

MODEL: SHARED STAFF

Primary employer

- Consider the following:
  - The organization that needs the most capacity
  - The organization that is centrally located
  - The organization that can obtain authorization without significant administrative burden
  - How the time and position responsibilities will be allocated among partners
- How much will each partner contribute to support the position?
- Will the independent contractor be vetted by all partners?
- What is the reporting structure for the position?

Position term

- Do the organizations prefer a part-time/full-time position or consultant?

Funding mechanism

- Can lease revenue be allocated to fund the position (long-term, with proportional contributions based on managed acres of each partner)?
- Are there federal or other government grants that can be used to fund the position?

Agreement structure

- Is it preferred to have one agreement with all partners signing on?
- Alternatively, should there be specific scopes and agreements with each district?
- Scope of work, potential roles and responsibilities may include:
- Assessment of agricultural parcels and detailed plans for managing them based on resource concerns, cropping systems, etc.
  - Engagement and technical assistance to tenants
  - Verification and lease compliance
  - Farmland management data collection and tracking

FINANCING

Paying for conservation is a perennial challenge. There are numerous local, state, and federal programs that offer grants, cost-sharing, or loans for implementing conservation, though they regularly face budgetary constraints. In addition, the intended beneficiaries of these programs often do not have the capacity to apply for assistance. They may not know about the program, the eligibility requirements, or simply don't have time to manage the administrative burden.

In the case of agricultural conservation cost-sharing programs, frequently, the eligibility depends on land ownership and tenancy.

There may also be restrictions that prevent public agencies from being eligible. The most common programs that can be used to pay for implementation of conservation practices, such as buffers or cover crops, are funded through monetary allocations outlined in the Federal Farm Bill and through state funding. These programs can be leveraged to pay for implementation when agencies are working with farmers.

The table below summarizes common cost-sharing programs to help agencies and farmers leverage available resources.

LEVERAGING COST-SHARE

Program	Federal or State	Eligibility	Contract Length	Type of Monetary Assistance	Rate
Environmental Quality Incentive Program (EQIP)	Federal	Farmer	Ranges from 1-5 years	Cost Share	Ranges from 50%-100%
Conservation Reserve Program (CRP)	Federal	Both	Typically 10 years	Cost Share	Up to 50%
Sustainable Agriculture Grant Program (SAGP)	State	Both	1 year or greater	Cost Share	Up to 75%

Program Provision	Program Provision Language	What It Means For Implementation	Recommendations
EQIP eligibility- Part 515- EQIP; Subpart F- Program Eligibility	Federal, State, county, and local governments, and political subdivisions of State government (e.g., school districts, conservation districts, etc.) and entities with members of units of government or subdivisions, are not eligible for EQIP; however, land owned by these entities may be eligible if leased to an eligible applicant. See 440-CPM-515-F-515.52.	Conservation Districts and Forest Preserve Districts are not eligible to receive payments for conservation practices under EQIP. However, if the farmland is leased to a eligible applicant (private farmer/ operator), they can enroll the agencies land into EQIP and receive payments through EQIP for BMP implementation. The operator is responsible for the implementation and maintenance of that practice per Conservation Practice Standards (CPS).	It is recommended that public agencies list in their leases that all conservation practices such as filter strips and grassed waterways that are on the property are and will be maintained per design and NRCS standards by the operator.
CRP eligibility- CRP handbook: Part 6, Section 1, Par. 126	Eligible participants can include: individual, trust-revocable, general partnership, federal-owned, joint venture, State and local government, corporation, churches, charities, and non-profit organizations, limited liability company, public school, limited partnership, BIA or Indian represented by BIA, limited liability partnership, trust-irrevocable, limited liability limited partnership, individual operating a small business, estate, Indian tribal venture	Conservation Districts and Forest Preserve Districts are eligible to apply for CRP funding through the Farm Service Agency	It is recommended that public agencies list in their leases that all conservation practices such as filter strips and grassed waterways that are on the property are and will be maintained per design and NRCS standards by the operator.
SAGP eligibility	Any unit of government, organization, educational institution, non-profit group or individual is eligible to receive funding through the Sustainable Agriculture Grant Program	Conservation Districts and Forest Preserve Districts are eligible to apply for CRP funding through the Illinois Department of Agriculture	It is recommended that public agencies list in their leases that all conservation practices such as filter strips and grassed waterways that are on the property are and will be maintained per design and NRCS standards by the operator.

Data in this spreadsheet was collected in October of 2018 under the 2014 Farm Bill (subject to change).

BARRIERS

Assessing constraints at the outset will help prioritize which strategies that incentivize conservation can be implemented through changes to agricultural leases, and which might require additional planning and reforms. In some cases, existing structures, such as procurement rules, bond funds restrictions, or farmland management policy, prevent making particular changes in a lease.

Procurement

Public sector policies may dictate how the bidding process works, preventing contracts that favor conservation implementation. Before considering conservation provisions in a lease, one should review existing procurement rules, which may dictate what changes you can make to your lease structure.

Agricultural land management governance

A policy in place may restrict or disincentive conservation activities (e.g. cap on lease term), not be aligned with the conservation goals of the organization, or not be formalized. Typically, adoption of or amendments to a policy would necessitate a formal process, such as a hearing and/or vote by the governing body of the organization. Yet, having an approved policy or guiding principles that encourage conservation can help mobilize resources and add clarity and transparency to the program.

Agricultural lease length

One of the key factors that drive investment into regenerative agriculture transition is land tenure security. Therefore, having limits on the term of the lease can disincentivize action. Assess if there are any restrictions on lease length, such as a term period limit in the policy or procurement rules, restrictive funds, or contractual obligations.

Capacity and partnerships

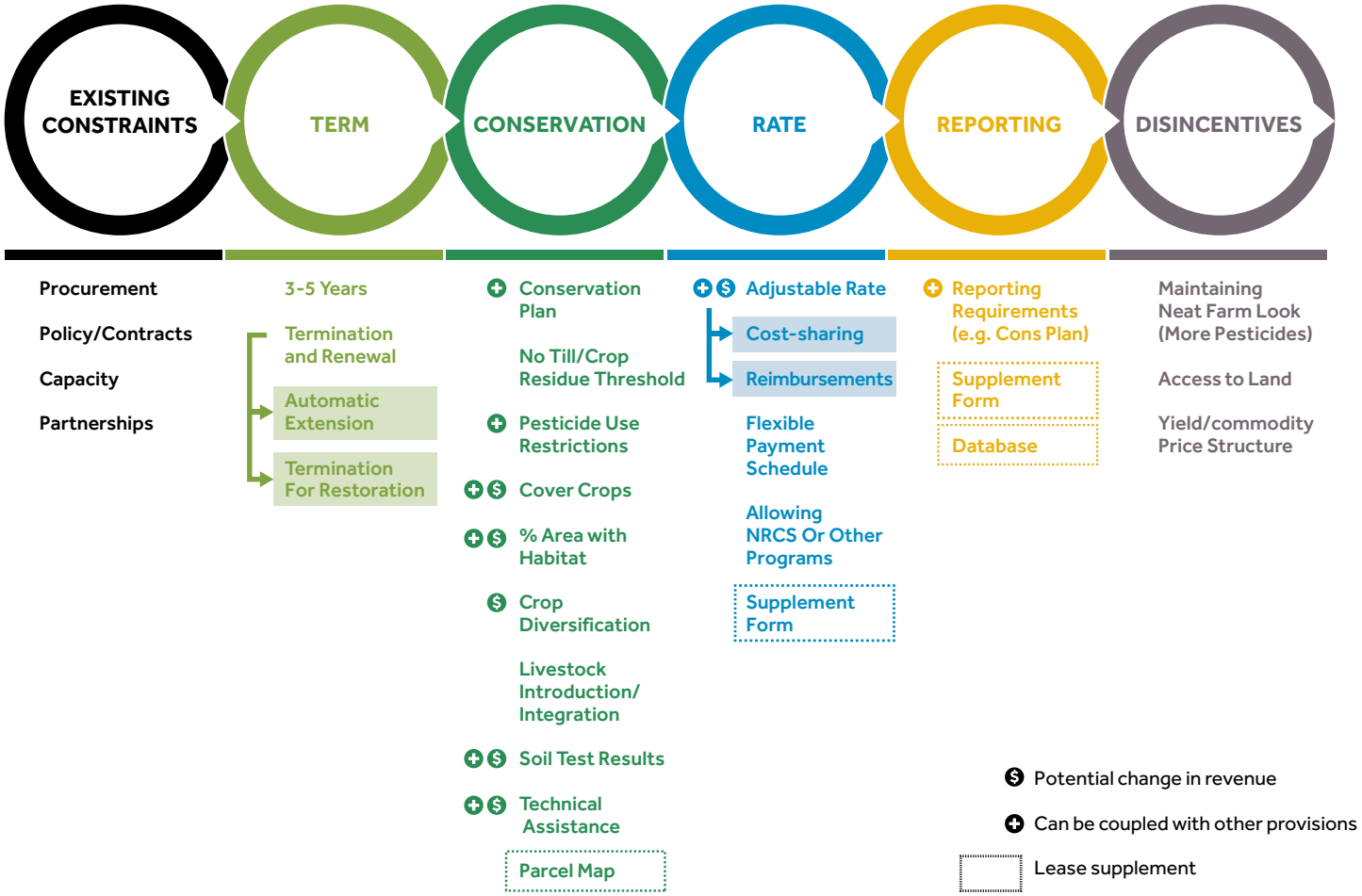
Staff time may be split between multiple responsibilities, with limited time to devote to managing agricultural leases and working with farmers. Furthermore, managing leases can call for agronomic expertise. If staff lacks agronomic expertise, such expertise can be supplemented by partnerships with the local Natural Resources Conservation Service office, the Soil and Water Conservation District, extension staff, or private consultants. Additional effort may be required to strengthen those partnerships.

CONSERVATION LEASE

As a binding contract, the lease agreement is the key instrument that land managers and owners can use to ensure that their land is managed in a certain way. Prior to drafting a lease agreement or considering changes to the lease, consider what barriers might exist in the current governance structure that could prevent implementation of desired conservation focused provisions in the lease.

There is a spectrum of options available to build a lease that incorporates conservation and regenerative agriculture principles (11, 12). Organizations can tailor their approach by selecting provisions that fit best within their current situation. The diagram below provides an overview of conservation provisions, while the following sections outline relevant considerations for each category and how they can be coupled with each other to achieve maximum impact.

FRAMEWORK: CONSERVATION LEASE



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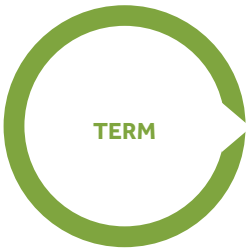


LEASE TERM

Increasing the lease term creates an incentive to implement more conservation because it enhances tenure security. As such, the tenant has an opportunity to engage in long-term planning and is on the land long enough to see the benefits of investing into on-farm practices. Conditions under which leases are renewed and terminated are also important because they can set the tone for establishing good working relationships with tenants and reduce transaction costs for the organization. For natural resource agencies that ultimately want to restore farmland to natural habitat, being upfront about plans and the timeline to terminate a lease ensures transparency in the process while addressing the organizations' needs.

To incentivize regenerative agriculture through the lease term, ensure that farmland policy doesn't set a cap term at a low number. If such cap exists, amend procurement rules or policies to increase or remove the cap. To streamline the lease renewal, explore and integrate provisions that allow for automatic renewals.

Term length of 3-5 years

Pros: Allows time for implementation of practices, increases tenant security, and reduces transaction costs.

Cons: Perceived reduction in flexibility to renegotiate rental rates.

A clause requiring annual approval and extension by the governing body can be used to provide regular oversight and engagement opportunity with tenants; term length can be variable from site to site and determined based on site management plans.

Streamlined renewal and expectation for termination

Pros: Further reduces transaction costs, builds trust with tenants.

Cons: Property transitioning to non-agricultural land use, untested tenant.

Termination provisions can be coupled with conservation provisions relevant to site needs and prospect of potential land use changes to ensure that termination is not unexpected. Furthermore, early termination for non-compliance should be included in the lease. Examples for streamlined renewals include: automatic extension without notice to terminate; option for adjusting rental rate in lease extensions based on a provided index (+ provision for indexing rate); right of first refusal when term is set to expire; lease term structure is 3+1+1 years rather than 5 years up front.

The next set of provisions to consider are related to implementation of specific conservation measures as part of the lease agreement.

CONSERVATION

In addition to creating a lease that encourages conservation practices, the lease can include provisions that require specific conservation practices to address particular resource concerns or establish a baseline level of conservation on the land. Some practices may require special skills or equipment to implement, and could be coupled with technical assistance and/or alternative rate setting mechanisms to ensure an equitable and sustainable lease. Below are various approaches that incorporate conservation practice provisions into the lease.

Require tenant to develop and submit management plans, such as conservation, pest management, nutrient management plans

Pros: No-to-low additional cost to implement; plans may be required for other cost-sharing conservation programs; an opportunity to work with local Soil and Water Conservation Districts, Natural Resource Conservation Service staff, or university extension offices.

Cons: Though planning is important and provides a foundation for action, having a plan does not guarantee that it will be implemented, additional administrative burden.

Ideally the required plans are developed according to an existing standard (e.g. NRCS) to ensure consistency and quality.

Require no till and/or crop residue thresholds

Pros: No-to-low additional cost, fundamental to reducing erosion and improving soil health.

Cons: Depending on how conservation tillage is defined, it may be challenging to verify; may require new equipment or adjustments to cropping system and additional technical support.

The tenant might need additional resources to switch to a no-till system if they haven't done no-till before. If there is additional cost of implementation, it can be subtracted from base rental rate. An alternative or additional way to verify ground cover is to measure % residue.

Restrict pesticide use

Pros: Opportunity to strengthen pest management provisions and couple them with a pest management plan.

Cons: The administrative burden associated with increased data management and verification.

In addition to restricting use of particular pesticides, the organization can provide guidelines regarding and/or require best practices aimed at limiting herbicide use overall.

Implement cover crops

Pros: Keeping the ground covered is one of the fundamental principles of soil health and helps to reduce erosion; cover crops are becoming more widely accepted as a part of a cropping rotation, thus enabling wider adoption.

Cons: There is a fairly low adoption due to lack of information about benefits, delayed benefits and increased upfront costs (~$20-30/acre).

To incentivize use of cover crops, such conservation provision can be coupled with an adjustable rate, for example, a discount for acres where cover crops are planted. More examples of how to couple conservation and adjustable rates are provided on the following pages.

Implement habitat, diversification, and/or livestock integration

Pros: Introducing requirements related to habitat and integration aligns with agencies' mission while diversification and livestock are tenets of regenerative agricultural system and improve soil health and environmental outcomes. Some agencies are piloting and implementing some of these practices already.

Cons: This is a newer approach that is more complex and resource intensive with potential pushback from the community (e.g. livestock operations in suburban areas). The agency can see a reduction in revenue due to taking land out of production associated with habitat practices.

To incentivize these types of practices, flexible rates can be used to lower rents.

Conduct soil testing

Pros: Relevant data is critical in informing management decisions and tracking progress. Advances in technology allow for data about biological soil properties that in turn inform management decisions. Soil test results and discussion of recommendations can be used as an engagement opportunity with the tenants. In addition, if the agency takes on the expense, it will then have control over data consistency and acquisition while sharing the benefit with farmers.

Cons: There is a cost to the responsible party, as well as an administrative cost to process and analyze data.

Soil testing is long-term investment with a learning curve and results should be provided as part of negotiations/bids to farmers to enhance transparency.

Soil data should also be linked to reporting provisions, if appropriate, to ensure that soil measurements are integrated into overall data tracking for the farmland. Without follow up, simply conducting soil testing does not guarantee implementation of conservation. In addition, without an effort to change management practices and associated changes in soil characteristics, investing in more expensive tests that measure soil biological properties is not worth the investment.

Provide technical assistance to tenants

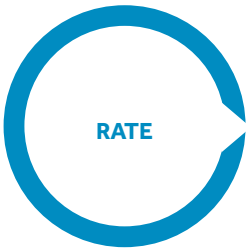
Pros: Providing support for implementing new conservation practices is critical to farmers' success and offering technical assistance can leverage partnerships with NRCS, SWCDs, or other agronomic organizations in the area.

Cons: Developing an effective program that provides needed assistance requires staff time and resources.

To incentivize participation in training or obtaining appropriate certifications, flexible rates can be used to lower base rate for tenants. Technical assistance programs can be internal or external or could be provided by a cooperative structure.

Lease supplements

Maps, practice specifications, and other supporting information (e.g. soil type) about the parcel should be provided by the agency to the tenants to increase transparency and solicit competitive bids.



RENTAL RATE

How the rental rate is set and the actual amount are important considerations in the lease negotiation process. If the goal is to promote sustainability and conservation, the rate should allow for adjustments based on investments made by the tenant, especially if the tenant is unlikely to observe the benefits from the investment before the termination of the lease. Offering more flexibility through the lease payment structure can aid tenants transitioning to sustainable practices in managing their risk, as expenses and yield could be impacted in this period of transition.

Below are various provisions that incorporate adjustable payment structures into the lease.

Adjustable rate

Pros: Base rate can be based on the market prices, reducing complexity and eliminating power imbalance; bids remain competitive w/strong incentive to implement practices; many ways to structure adjustments through reimbursements or cost-share.

Cons: Detailed information about parcels and practices is needed to determine appropriate discounts. The agency might see a reduction in revenue.

Implemented practices, associated costs, and responsible parties for those costs need to be clearly articulated in the lease agreement.

There are three ways to think about adjustable rates - via a cost-sharing, reimbursement, or revenue-sharing approaches.

Cost-sharing approach

Reduction per practice: Reducing rate for improvements, for example, the rent for cropland acres planted with cover crops shall be reduced by 10%. The rent for land taken out of production for field borders, filter strips or grass waterways will be reduced by 20%.

Graduated rent: Allows for rent to be reduced by a certain percentage in first year, and brought up year by year to the normal rate. This method works best with a 3+ year lease. Good for transitioning or beginner farmers.

Implement and maintain: Agency pays for the installation or equipment needed, while tenant is responsible for maintenance of the practice.

Reimbursement approach

Implementation cost: Rent is the difference between market rental rate and implementation cost for conservation measures according to the budget submitted by the prospective tenant. A lease supplement might be helpful to capture expenses and specs for improvements.

Reimbursement: Agency reimburses tenant based on actual cost of implementation of the practice (not ideal since the capital is often needed up front to invest)

Revenue-sharing approach

Rate is based on share of gross revenue (25%-40%) – need to have and share detailed numbers

on production costs; focuses on yield rather than conservation; reinforces conventional cropping systems with few rotations. Not recommended for conservation leases.

Additional provisions and supplements can be utilized to provide additional flexibility for the lease rate adjustments and efficiency in their implementation.

Flexible payment schedule

Pros: Allowing tenants to make smaller payments early on and increase payment amount over time can provide tenants more capital to invest if they aren't able to invest all the capital up front.

Cons: More payments or different types of payments can increase the transactional costs for the agency and make it more difficult to budget.

Participation in conservation assistance programs

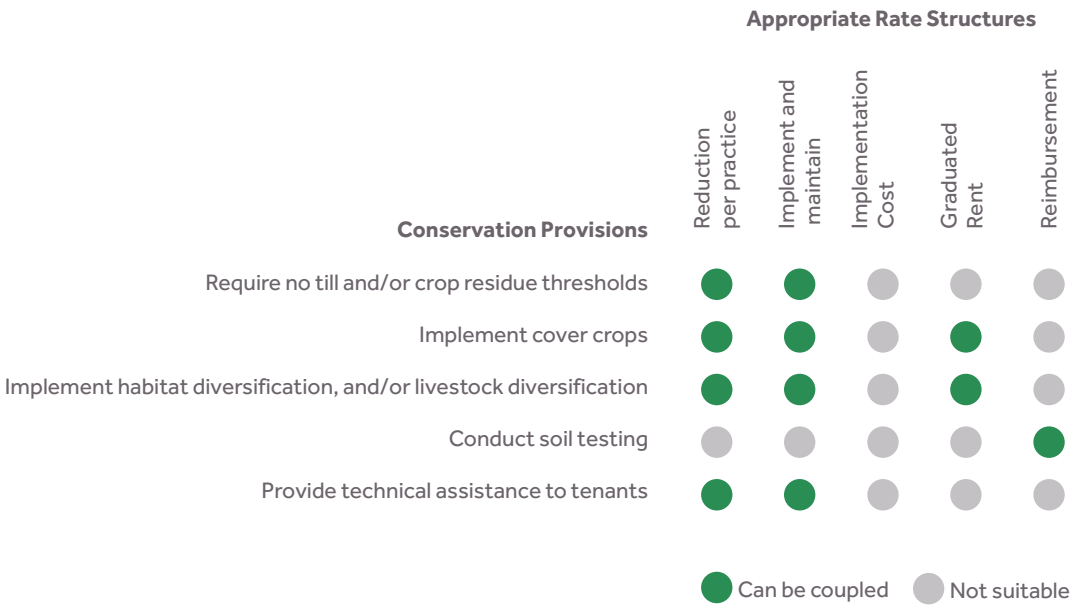
Pros: Additional resources (e.g. NRCS cost sharing) can be leveraged to implement practices, for both tenants and the agency.

Some funds can only be distributed directly to the farmers and they must be willing to go through application process.

Lease supplements

Reimbursement lease supplement can be used to specify improvements and expenses associated with implementation of conservation practices.

The figure below highlights most suitable ways to combine conservation provisions with various adjustable rate structures. For example, technical assistance (workshop or field day) that helps implement conservation practices can be reflected in the rate via a set lease rate reduction or the agency providing resources (i.e. implementing) for the training.



REPORTING

Data about management activities and outcomes is key in assessing progress, which can in turn build more support for the farmland leasing program and more resources allocated to its implementation. As data is gathered and analyzed, agencies can make informed decisions about the program and continue to refine it to achieve conservation outcomes.

Reporting provisions

Pro: Provides data for increased transparency and evaluation of the program. The data about management establishes the basis for discussion and improving relationships with tenants.

Cons: Collecting and analyzing the data creates an additional administrative cost.

This provision should be coupled with conservation provisions that require documentation (e.g. conservation plan submission, pesticide/nutrient application) to make verification more efficient. If the agency is developing a data tracking system, reporting provisions in the lease can be an efficient mechanism to ensure that needed data is provided to the agency.

Lease supplements

A standard form to gather data from tenants can be used to ensure consistent reporting and intake of the relevant data.

DISINCENTIVES

Some provisions have the potential to disincentivize conservation. When reviewing and amending the lease to encourage and/or require particular practices, it is important to identify and change provisions that may inadvertently create barriers to conservation.

A 'good neighbor' provision

These are aimed at maintaining a neat farm look and managing noxious weeds. Provisions like these can incentive the overuse of pesticides. This can be addressed by either removing the provision or strengthening the pesticide/ herbicide restrictions.

Access to land

As part of their duties, public agencies often reserve access to leased farmland during certain parts of the year. Restricting farmer access can prevent certain on farm conservation practices (ex: winter cover crops), conversely, agency staff need to access land to verify lease conditions are being met and/or to install practices. Conditions need to be clearly stated and formulated so that conservation is not impeded.

Rental rate structures

While rates should be set to ensure equity and transparency, adjustments based on yield or commodity prices or revenue-sharing cost structures may disincentivize more diverse crop rotations and innovative practices that carry the risk of reduced yield.

The lease agreement is the tool that allows the land owner and the tenant to not only formalize the expectations and roles, but also to build a solid foundation for a working relationship between them. Public agencies that lease farmland already have a lot of the legal and administrative infrastructure to enhance their written agreements. The provisions outlined above demonstrate the range of options an organization has to create a lease agreement that supports transition to regenerative agriculture, works within their existing conditions, and provides mechanisms to enforce implementation.

An organization can start by adopting one or two provisions that may be easier to implement, such as extending the term of the lease. As relationships between the organization, i.e. the landowner, and the farmers in the community progress, additional conservations measures can be included in the lease in a way that distributes some of the risk and financial burden in an equitable way while allowing for verification and transparency. Many of the lease provisions outlined here can be also utilized in the private sector. Additional resources on farm leases are provided by the Farmland Information Center and Vermont Law School Center for Agriculture and Food Systems.

IN THE SPOTLIGHT...

The McHenry County Conservation District, located in northeastern part of Illinois, owns over 25,000 acres of open space, including many diverse habitats and approximately 6,000 acres of farmland. Their vision is to manage their agricultural land holdings balanced with natural resource considerations and to contribute to a culture of conservation and stewardship among the farmers in their community. The District partnered with the Liberty Prairie Foundation, Delta Institute, and Foresight Design to develop a data system to assess, track, and inform management on their 6,000 acres of farmland. The work was supported by Food:Land:Opportunity Fund through the Searle Funds at The Chicago Community Trust and the Kinship Foundation.

McHenry County Conservation District owns and manages approximately 6,000 acres of farmland. While the long-term plan is to convert this land to natural habitat, the District sees many benefits in keeping the land in agricultural production for the time being. In keeping with the goals of the District's Farm Management Policy, the District is intent on working with their tenant farmers to adopt regenerative farming practices that restore soil health, improve the resiliency of the farm, and enhance habitat.

The project team began by assessing the farmland management system that was in place and what would be needed in a revised system to efficiently bring about better farming practices. It became clear that fundamental needs were (1) a better way of managing all data related to the District's farmland and (2) a way to better understand the condition of each parcel of farmland and to track management practices being used on that land. This understanding was critical in informing strategies for improving stewardship of the farmland and accomplishing the goals of the District's Farm Management Policy. Consequently, the partners focused their efforts on designing a general data tracking system and an index assessment system that would make it possible for District staff to assess the condition of each parcel of land and to work with their tenants to make changes in how the land is managed. There are many indexes that managers of natural habitat can use for translating complex data into quickly understandable numbers. This kind of index is largely lacking for conservation-minded farmland managers.

delta institute

The team set out to develop an index system that condenses a number of complex parameters related to farmland (e.g. nutrient management, cropping system, soil testing) and natural land (e.g. pesticide management, in-field habitat) management to provide an overall conservation assessment - at a parcel scale and at a composite District-wide scale.

After numerous discussions with the District's natural resource team - including data specialists, restoration ecologists, and land managers – the project team identified 14 different areas of management activities or field conditions that would form the basis of the Agricultural Conservation Index (ACI). For each category in the ACI, a point value between 0 and 4 (with 4 being the highest) is assigned based on current conditions and current practices being used in each field at a particular time. A higher overall score denotes better soil conservation conditions and practices in the field. The ACI can be used to take a current census of conditions on District farmland and to continue to track those conditions over time through annual ACI assessments. The goal would be to increase each field's ACI score over time while also increasing the average index of all of its farmland over time. The ACI scores would be useful for District-farmer conversations and also useful for communicating with the District board and the public about how well the farmland is being managed.

The ACI outlines five major management categories: nutrient management, soil testing, cropping system, best management practices, and pesticides.

Each category can be weighted to prioritize a particular resource concern such as ground water, soil health, wildlife habitat, etc. While the project team developed the initial ACI structure to balance the complexity of particular management activities and capacity to collect and analyze large datasets that the District now has, the system is set up in a way that allows new categories and specific activities to be added as needed once the initial structure is up and running.

As a result of the project, the District is now working to create the general data tracking system that will include the data needed to generate ACI scores. In this process, the District staff is beginning to standardize their data collection methods and digitize data that has been amassed over many previous years to fully implement this new approach.

The ACI offers great potential for gauging the conservation value of current cropping systems and informing transitions to more conservation-focused agricultural systems that will benefit the landscapes of local communities. It can also be used as a model for other natural resource organizations, both public and private, that manage working lands in the Midwest.

The ACI could also be an extremely useful tool to encourage conservation adoption by farmers. For example, it could be utilized to increase implementation of conservation practices while maintaining farmer profitability through a flexible rate cash rent lease. The rental rate can be adjusted based on implementation of conservation practices rather than crop yields or commodity prices, which incentivize high production agriculture.

ADVOCACY AND ACTION

In this section, we discuss policy priorities for incentivizing conservation on agricultural land and reforming public farmland leasing.

Policy has the potential to be a powerful tool to either incentivize or require agricultural conservation practices. Both county and state level policy initiatives can serve to raise awareness, build capacity, increase transparency or provide badly needed resources to affect this change. Delta Institute works with partners to research, analyze, and design programs and policies aimed at creating thriving landscapes and protecting natural resources in the region. The success of these efforts often rests on broad support from decision makers, elected officials, and other community influencers. Enacting policies enabling implementation of land stewardship initiatives and activities at various levels of government allows us to ensure that there are mechanisms in place to support farmers and improve natural resources. Following a review of market drivers for implementation of the Nutrient Loss Reduction Strategy in Illinois, Delta developed a series of policy briefs outlining opportunities for action for state agencies. These include better leveraging the state revolving fund for clean water, establishing pay-for-performance conservation programs, and enhancing tenure security to incentivize long-term conservation investments. Although the briefs focus on the Illinois policy landscape, analogous programs can be explored and implemented in other Midwestern states to improve soil health, reduce erosion and loss of nutrients, and improve water quality.

delta institute

Change through legislation
Delta works with partners to develop and advocate for policies that incentivize conservation. In Illinois, Delta collaborates with Illinois Environmental Council and Illinois Stewardship Alliance to build support for conservation leasing on public farmland are put into place among elected officials and at the grassroots level. There are numerous strategies, both at the state and local level, that can help the public sector reform and improve farmland management. These range from requiring that conservation measures are included in leases, to bidding reform, to reporting requirements. The policy recommendations are outlined below.

COUNTY RECOMMENDATIONS

Draft model lease language for counties

Without requiring any policy or regulatory change, one strategy to encourage conservation practices is to provide a model lease for counties. Given that the current nature of these leases vary greatly, and some counties do not have the staff to negotiate better leases, much could be gained from providing a model for counties to use when leasing.

Draft model ordinances for counties

County governments may also adopt ordinances that oversee leasing of land owned by that county, or a county unit of government such as a Forest Preserve District. Providing a model ordinance for counties to adopt that explicitly delineate what lease arrangements may look like, and what types of lands, crops, practices, etc. should be given preference.

Bidding reform at the county level

At the county level, changes to procurement codes can encourage greater conservation practices. This option involves working with county governments to require that a county government, forest preserve district, or other local unit, must choose a tenant implementing conservation practices over traditional farming if the bid offered is of equal cost. Stated preferences for conservation practices in RFPs could encourage more bids to include these best practices.

Dedicated funding stream from leases

Research has shown that the revenue generated from these leases are often incorporated into general operating budgets of the unit of government. There were seven identified county-level units that allocated the revenue towards natural resource departments, which should be the model. A county ordinance could explicitly require revenues from agricultural public land leases to be dedicated to conservation programs within that county. This recommendation will only be effective for those forest preserve districts, and other units, whose budgets are independent of the total county budget. MWRD is one example that we recommend urging that revenue ($670,000 from eight leases) be dedicated to nutrient pollution reduction and conservation practices, as opposed to a general revenue fund (GRF). Drawbacks of this proposal could include a reliance on those dollars to fund conservation, encouraging overuse, but coupled with requirements for conservation best practices this could supplement existing conservation practices. This money could additionally be utilized as match to access additional capital.

Transparency

A county ordinance could also require that the county, forest preserve district, SWCD, or other unit, is required to report on the leases they enter into. This reporting could be required annually, at the end of lease terms, or another time period deemed most effective. The report should, at a minimum, require disclosure on the number of leases, the crops grown within each lease, what conservation practices are implemented, and how revenue generated from leases is spent. The report should also demonstrate which of the land leases are in critical areas, and make recommendations on conservation practices appropriate for those areas.

STATE RECOMMENDATIONS

Requirements for local government

Requiring local governments to enact best practices for their agricultural land leases

State legislation could be pursued that requires that each county government develop an ordinance to regulate the leasing of agricultural lands. This legislation would prescribe that such an ordinance require conservation best practices.

Requiring forest preserves to include conservation in agricultural land leases.

Through a change in the Downstate Forest Preserve District Act (70 ILCS 805), legislation could require that agricultural land leases entered into must include conservation practices. The more prescriptive those practices, the more difficult the legislation to be passed. This will also likely be seen as a "mandate", and legislation that states instead that an entity "may require conservation practices" in a lease, would be more favorably received.

Agency conservation requirements

Requiring conservation in agricultural land leases entered into by state agencies

Over half of the public land leases in Illinois are those entered into by the state - Department of Agriculture, Department of Natural Resources, Department of Transportation, or public universities. Legislation amending the State Forest Act (525 ILCS 40), could require that state agencies shall/may require conservation practices in any leases that they enter.

Legislation can be modeled based on the following example from Iowa's statute: "The department may require the establishment of a conservation system, crop rotation, or cover crop, if appropriate. The department may require that a beginning farmer adopt generally accepted farming or soil conservation practices, so long as such practices are compatible with the department's policies related to resource management and outdoor recreation."

Administrative rulemaking related to agricultural management leases

The Illinois Administrative Code considers agricultural management leases (40 Ill. Reg. 825, Title 17, §150.20). A new administration could pursue an administrative rule change through JCAR to establish procedure for incorporating conservation practices into lease arrangements on public lands. This rulemaking could also specifically state that leases entered into may not allow pesticide use on the lands or must implement best management practices.

Legislation to give Department of Natural Resources authority to require best management practices in all agricultural land leases

Similar to other recommendations, this legislation would encourage conservation practices by simply giving the Department of Natural Resources the authority to make recommendations and requirements when they enter into a lease agreement. Such legislation would be educational and directive, without being a mandate.

Conservation on a portion of state agricultural leases

Requiring that a portion of all agricultural land leases must include conservation practices.

Statewide legislation over the Departments of Transportation, Agriculture, and Transportation, could state that a dedicated portion (i.e. 10%) of all land leased by state agencies for agricultural purposes, must be land on which conservation best management practices are performed. Legislation could also be written to prescribe a percentage dedication for cover crops, beginning and sustainable farmers, or other tenants and practices that would aid nutrient reduction.

Bidding reform at the state level

In an effort to encourage greater conservation, changes to the state procurement code (30 ILCS 500) may be effective. Statewide legislation would require that a state agency choose a tenant implementing conservation practices over traditional farming if that bid is not 'X'% more, or alternatively, is equal cost. Similar legislation has been passed pertaining to recycling services (30 ILCS 500/45-20).

Conservation and reporting

Transparency

A state legislation could encourage transparency by requiring that the Department of Natural Resources and Department of Agriculture report on leases they enter into with public lands. This reporting could be required annually, at the end of lease terms, or another time period as deemed most effective. The report should, at a minimum, require disclosure on the number of leases, the crops grown within each lease, what conservation practices are implemented if any, and how revenue generated from leases are spent. The report should also demonstrate which of the land leases are in critical areas, and make recommendations

on conservation practices appropriate for those areas.

Training

State legislation could require that those tenant farmers that enter into an agricultural lease with the state of Illinois complete training with respect to conservation best practices or even require a consultation with the County SWCD. Training is required for most entities that do business with the state with respect to ethics and procurement.

Policy examples

In 2007, Idaho established a conservation leasing program that allows entities interested in conserving historic, cultural, and environmental values the opportunity to lease trust lands at fair-market value

Connecticut passed a law (Public Act 14-169) broadly permitting its Commissioner of Agriculture and Commissioner of Energy and Environmental Protection to place conservation or preservation restrictions on any lands in their custody.

In 2019, Illinois saw many changes in the composition of the legislature and administration. The conservation coalition has worked to advance the policies related to public land management and conservation-focused farming practices through several legislative efforts. These include a bill that expands activities of Soil and Water Conservation Districts to include conservation of soil health and organic matter in soil (HB2737).

The Midwest region as well as other agricultural areas in the US face many similar challenges related to transforming agricultural systems to support healthy and resilient farms. Although advocacy and policy strategies highlighted in this report focus on Illinois, there are opportunities to apply them in other states in the region where incentives for soil health and conservation on agricultural landscapes need to be realigned.

RECOMMENDATIONS FOR ACTION

- Draft model lease language for public agencies and other institutional landowners to utilize.
- Adopt local ordinances that ensure agricultural leases include conservation measures, revenue allocation to conservation, reporting, and procurement codes that prioritize conservation.
- Adopt state legislation that requires local governments to include conservation measures in agricultural leases.
- Adopt state legislation that requires all or a portion of agricultural leases to include conservation measures, reporting, training, and procurement codes that prioritize conservation.
- Explore and adapt policy models from other states for conservation-focused farm leases.

CONCLUSION

In the Midwest nearly 50% of agricultural land is leased, and thus managed by farmers who don't own the land. While one could assume that landowners would have an intrinsic interest in making sure their assets are well-managed, their decisions regarding land management often don't reflect that.

Institutional landowners, such as public agencies, often have extensive local knowledge, but lack the technical and administrative capacity, information, and institutional support to advance transition to regenerative agriculture. Furthermore, within the current land valuation system the linkage between soil health and land value is not explicitly established due to a variety of cultural and technical challenges. To overcome these challenges, there is a need for practical solutions that enable landowners to benefit from investing into long-term conservation and ensure that their tenants farming their land also support regenerative farming principles.

New leadership in Illinois signals an opportunity to advance policies and programs to advance natural resource protection and conservation. This report summarizes background research to inform transition to a regenerative system of agriculture in Illinois. This report also presents tools that can enable land managers to adopt reforms to their farmland leasing programs through "conservation" leasing. There is momentum within agencies to integrate farmland management into their long term planning and budgeting.

A lease agreement that focuses on regenerative land management could also be used as a tool for landowners to affect the value of their land and ensure that their tenants implement regenerative agriculture. Currently, the land valuation process does not explicitly incorporate soil health and the dynamic nature of soil properties in response to different management systems, we identified many opportunities to catalyze change in this system.

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