



# Carbon Yield

Embracing working lands to  
generate crops and impact.



# The Soil Investment Opportunity









# Land Holds a Scalable Solution to Climate Change

## *Regenerative Organic Agriculture*

- ✂️ An Investment Grade solution with Impact
- ✂️ Carbon drawdown at a rate of 2.5 - 6 tons of carbon/acre/year into regenerated soil
- ✂️ Opportunity to sequester 25-50% of the world's annual carbon emissions if adopted on all working lands





# Midwest is Greatest U.S. Opportunity to Build Soil Carbon

Some of the **highest** soil carbon loss in the world has occurred in the Midwest.

As much as **70 tons** of carbon per acre have been lost.

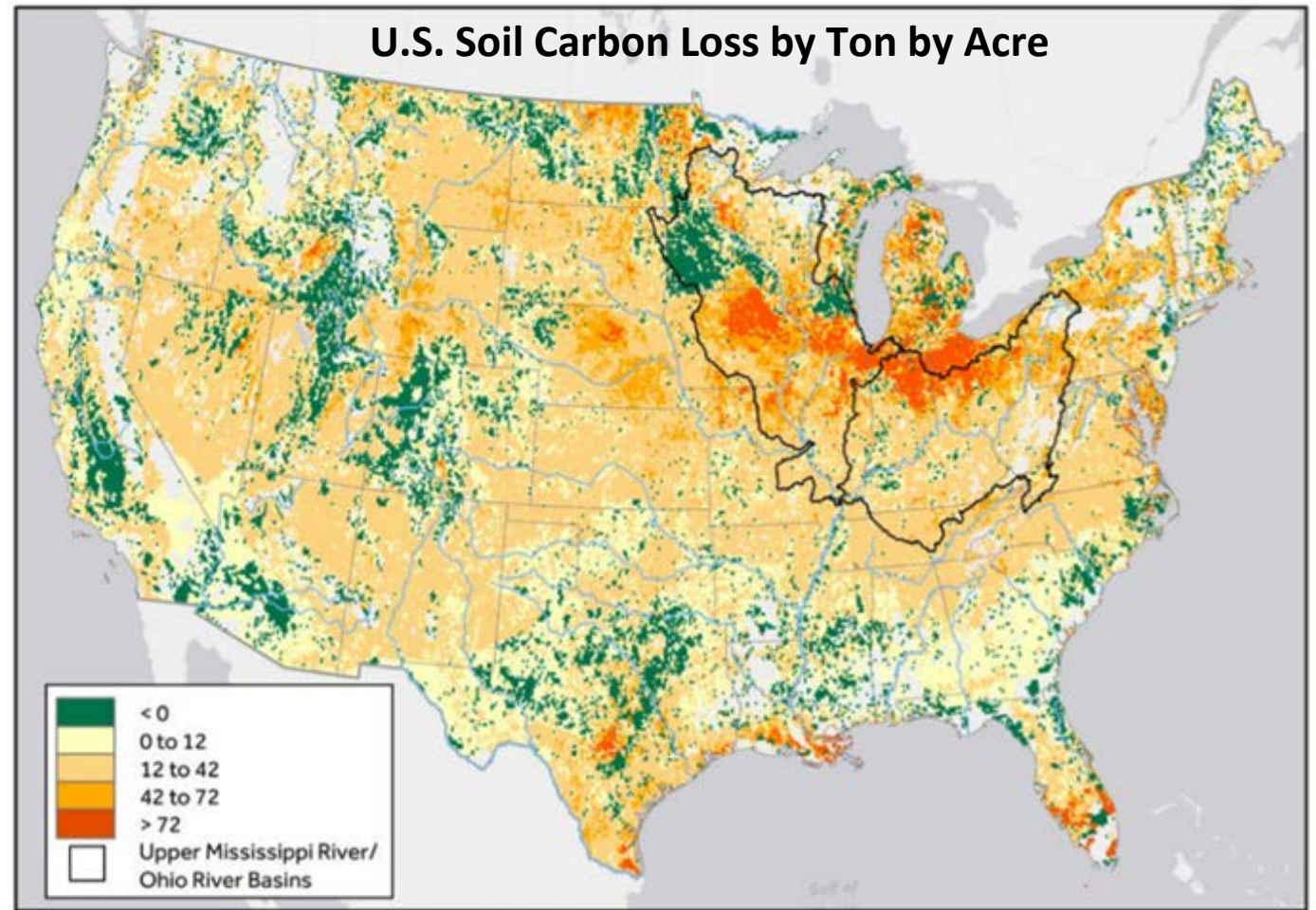


Figure 1. Change in SOC Stocks (0-200 cm), Presettlement to 2010. Adapted from Sanderman et al. 2017.





# Growing Pressure on Midwest Grain Farmers

Status quo farm model plagued with economic challenges.



Sustained commodity crop **price** depression.



Rising per unit **cost** of conventional inputs.  
Quantity of inputs increase as soil health degrades



**SHRINKING  
MARGINS**

**\$12 to \$57**

Average farmer **losses**  
per acre since 2014

***“We’re ... in the fifth year of declining equity for farmers and ranchers. We’re at the position where there isn’t a[ conventional] ag commodity that has made any money in the past five years.”***

- Scott VanderWal (March 2019); President of the South Dakota Farm Bureau





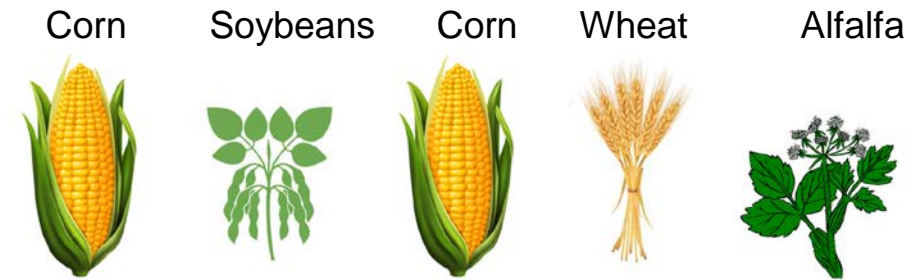
# Regenerative Organic Farming Provides Relief

Organic practices involve eliminating all chemical inputs and undergoing a **3 year transition** and certification process to access premium prices in the market.

Regenerative practices **rebuild soil life and root systems** through varied crop rotations, cover cropping, integrating livestock, and minimizing tillage

**50% – 200%**

Durable Organic Price Premium  
(since 1997)



Possible 5 Year Midwest  
Regenerative Crop Rotation:

In combination, regenerative organic farms:

**Drawdown carbon**

**Increase soil resilience to drought/floods/extreme heat**

**Decrease input costs and increase revenue**





# Barriers For Farms to Pursue Organic Transition

COST OF TRANSITION for a 2,500 Acre Farm: \$1 Million

**3 Year transition period until certified.**

**Farming Barriers**

**Financial Barriers**

New Practices  
Higher upfront costs  
Decreased yields  
Strong farming traditions

Existing lenders do not  
support transition



Carbon Yield



# Carbon Yield is the Solution

A fund to transition conventional grain farms to organic regenerative practices.



Deploy capital.

Provide resources and expertise on locally-tailored regenerative organic practices.

Develop, certify, and bank carbon credits.

Access to Capital

Secured loans up to \$1M per farm (\$400/acre).

7% interest rate.

Loan interest paid in-kind during transition.

3 year transition and certification process.

Legal commitment to lasting regenerative practices and monitoring.

50-200 % organic price premium.

Share 50% of carbon credit revenue generated over 10 year period between farmer and fund.

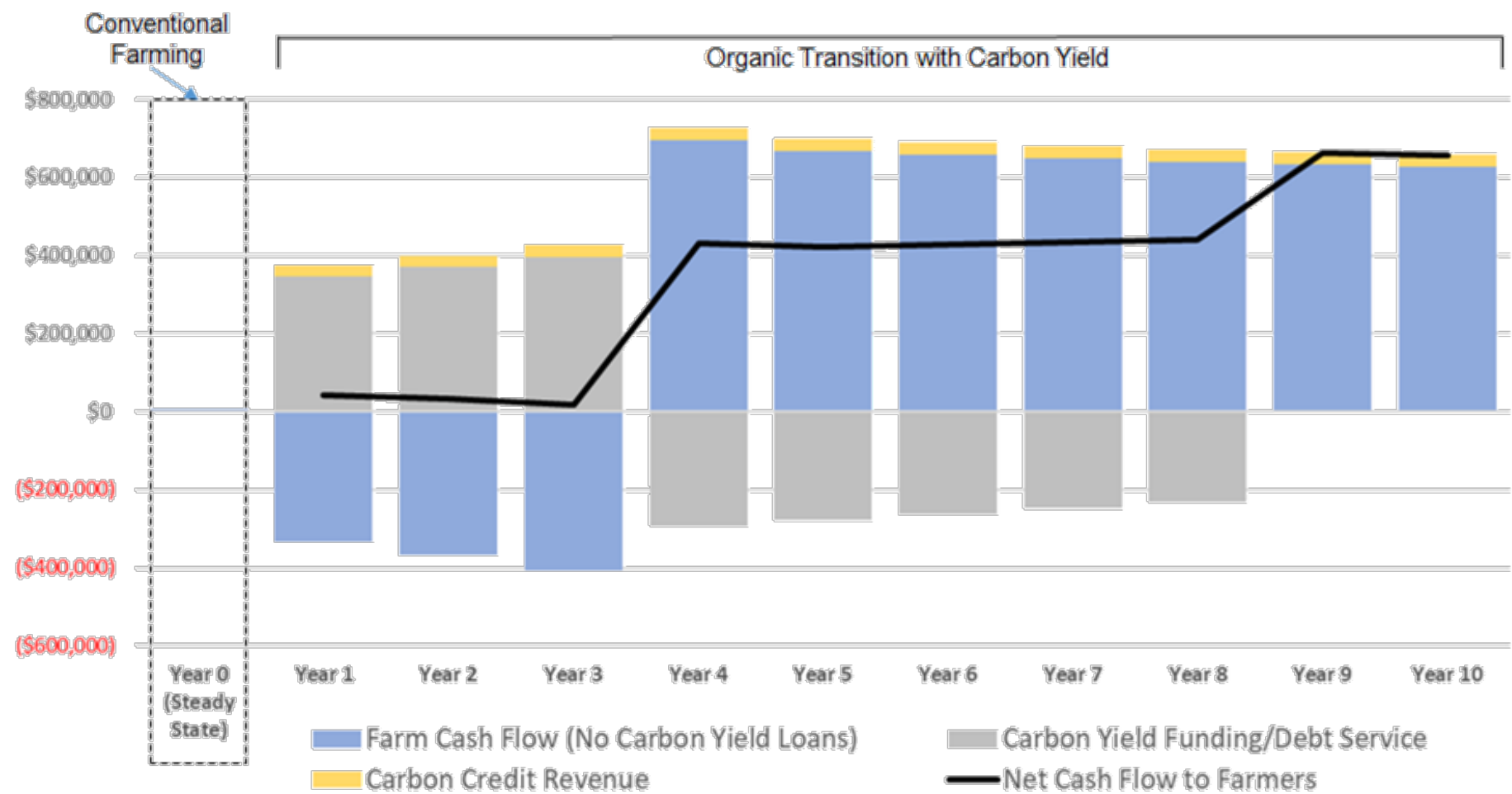
Return via loan principal and interest payments

50% carbon credit revenue share.



# Illustrative Cash Flows to Farmers With Carbon Yield

Carbon Yield’s loans provide farmers with the required capital and liquidity to complete the 3 year transition to organic.








(1) Illustrative model utilizes a 2,500 acre farm provided with a \$1mm Carbon Yield operating loan  
Sources: USDA, University of Minnesota , Mercaris, NRAES, Genetic Literacy Project





# Alignment of Incentives With Farmers

## Farmer Value Proposition:

-  Minimal Upfront Cost
-  Attractive Interest Rates
-  Capture and Retain Full Organic Price Premium
-  Farm Planning and Assistance
-  Hands-Off Carbon Credit Banking

## Farmer Risk Mitigation:

### Operational Risk:



Resources and expertise for regenerative organic practices

### Financial Risk:



Interest paid in kind during transition period to improve farmer liquidity

### Carbon Banking Risk:



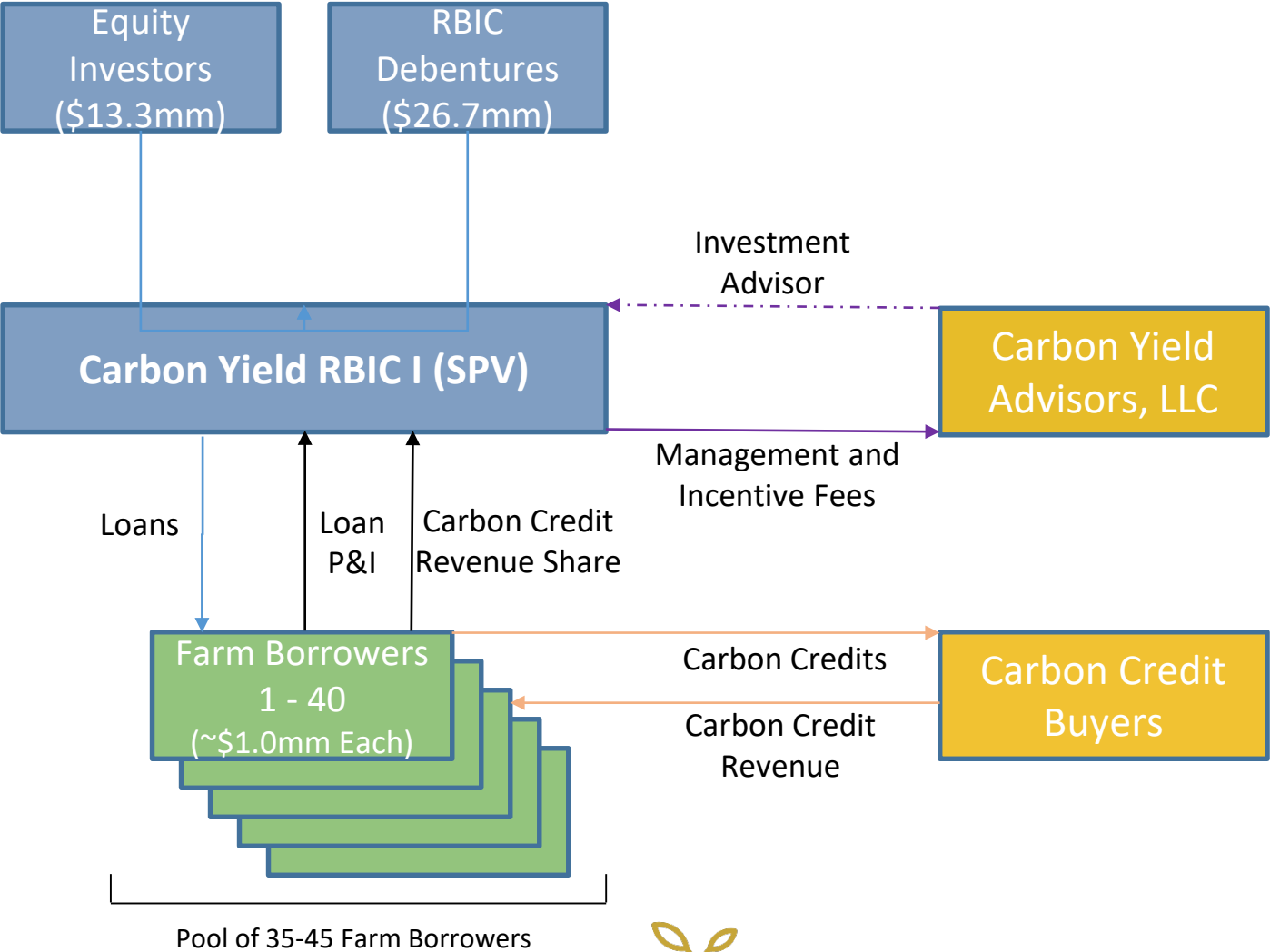
Carbon Yield certifies and markets carbon credits, sharing pricing incentive





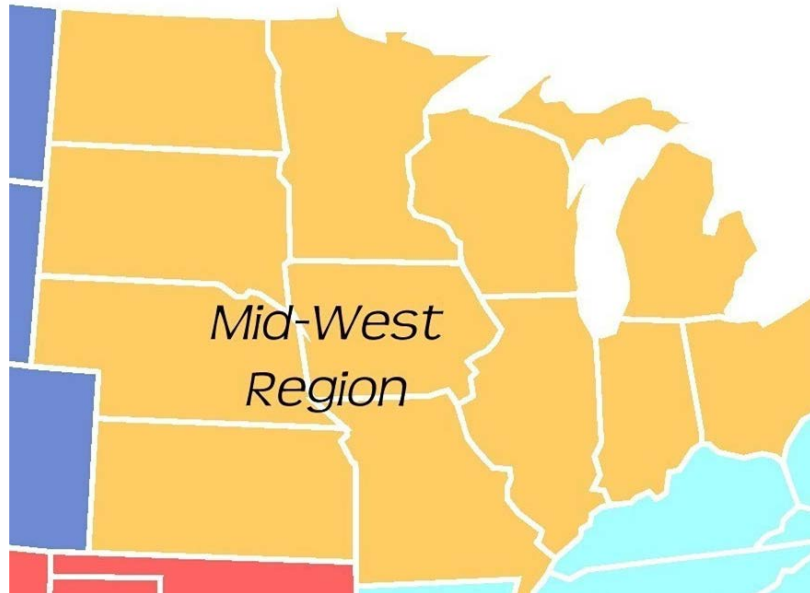
# Carbon Yield Fund I Detail

Fund I Investment Profile	
Fund Type:	Rural Business Investment Corporation
Investment Geography:	Midwest United States
Fund Size:	\$13.3 Million
Target Leverage:	2:1 (Up to \$26.7 million)
Investment Period:	5 Years; Based on Farms Identified in Years 1-3
Fund Life:	10-12 Years
Target IRR:	10-12% (net of fees)
Fees:	2% Management Fee (Committed Capital) & 20% Incentive Fee (6% Hurdle Rate)
Target Investors:	Family Offices Institutional Capital, and Farm Credit System Banks and Associations
Minimum Investment:	\$1.0 million (Accredited Investors)





# Substantial Target Market



**11,672** large family Midwest Farms  
meeting Carbon Yield Fund Profile  
~33.1MM acres

**40** farms in Carbon Yield Fund I  
~100,000 acres



# Deploying Capital Through Channel Partners

✧ Infrastructure Partners

✧ NRCS and Private Crop Advisors

✧ CPGs - General Mills just announced a commitment to transition 1 million acres to regenerative.



Infrastructure partners build organic supply chains and help farmers transition with pricing, insurance, and agronomy support.



# Carbon Yield has Traction with Farmers



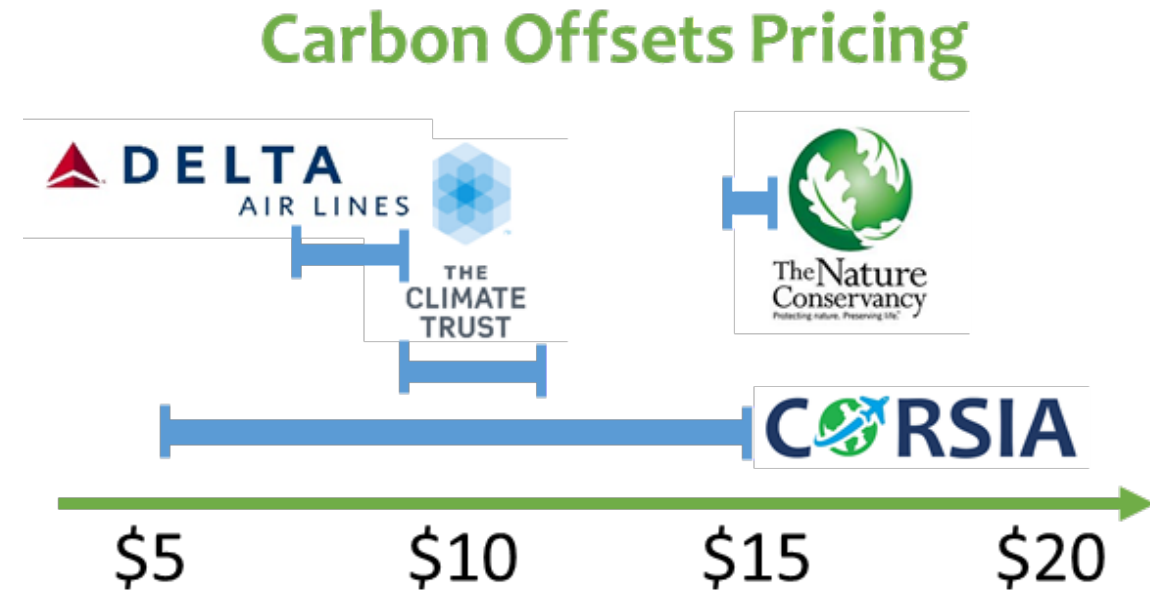
*Above: Eddy Flux Tower on Stone House Farm, our pilot site. These towers measure greenhouse gas changes from various management practices. The project will provide a foundation for more efficient Carbon modeling for farms funded by Carbon Yield.*

- ✎ 2,500 acre **proof of concept** farm, crediting offsets in 2019.
- ✎ Estimate carbon credits at 3.4 tons/acre/year
- ✎ Carbon offsets to be generated under **Verified Carbon Standard (VCS)**, the **largest voluntary carbon registry**, trusted by target customers.



# Target Buyers of Carbon Offsets


- ✎ Companies such as Microsoft, Google, and Lyft have made carbon offset commitments.
- ✎ Carbon Yield has **contacted brokers with vested bids** from corporations seeking credits.
- ✎ CORSIA aviation offsetting initiative will **increase demand for voluntary credits up to 10x**
- ✎ Collected market data directly, and have **modeled a conservative price of \$7/ton**







# Alignment of Interest with Investors


## Investor Value Proposition


 **Stable Return Profile:** Five year amortizing loans with significant collateral (maximum 60% LTV)

 **Fit Within Real Estate Allocation:** Returns in-line with traditional real estate assets; upside from carbon credit revenue

 **Reduced Exposure to Commodity Volatility:** Durable organic price premium insulates investors from commodity price volatility

 **Alignment of Incentives:** Incentive fees accrue only after investor return of capital and initial 6% hurdle rate is met

 **Capital Reserve:** ~10-15% of capital commitment to be reserved to provide flexibility for troubled loans, if needed.

 **CRA Eligibility:** Eligible investors receive Community Reinvestment Act investment credit

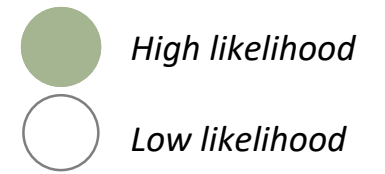
**4.2%** Projected Investor IRR prior to benefit of carbon revenue share




**6%** Hurdle rate prior to payment of management incentive fee

**-55%** Ability to withstand 55% decline in organic premium before negative pressure on investor returns



# Risks and Mitigants

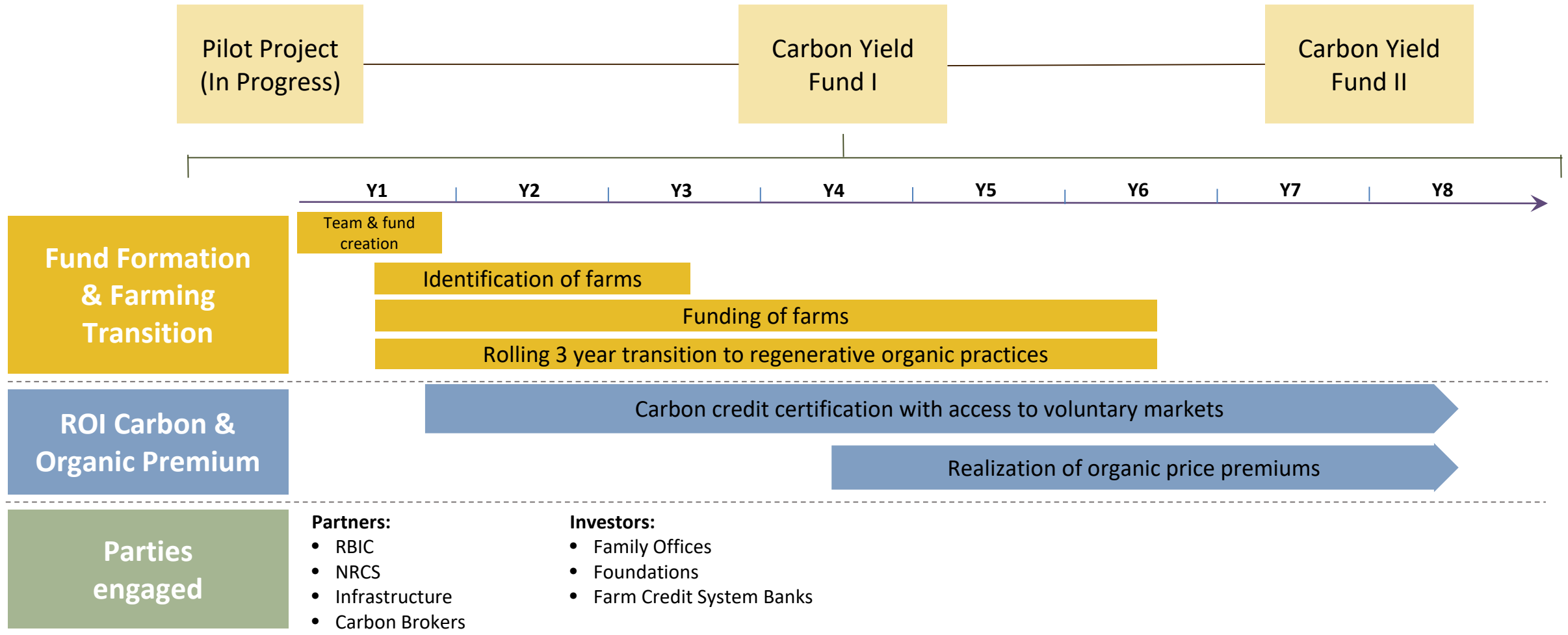


	Risk scenario	Likelihood	Mitigating factors
Farming	Lack of farmer adoption	 <p>Economics driving farmer adoption</p>	<ul style="list-style-type: none"> <li>Align with infrastructure partners who are motivated to find conventional farmers considering converting to organic.</li> <li>Partner with NRCS to help establish farmer trust, combine resources, and connect to soil health initiatives.</li> <li>RBICs offer leverage for up to \$150 million in funding, other variable interest financial products can be accessed beyond that level.</li> </ul>
	Organic price premiums do not materialize	 <p>Price of future organic premiums</p>	<ul style="list-style-type: none"> <li>Inclusive of debt service, organic farms more profitable with up to 55% declines in organic premiums from today's prices.</li> <li>Historic 50 to 200% premium since 1997.</li> <li>Funding and expertise to support 3 years of transition.</li> </ul>
Market	Low voluntary carbon market demand & eligibility	 <p>Uncertainty in dealing with carbon market</p>	<ul style="list-style-type: none"> <li>Partnering with knowledgeable brokers to navigate offset sales.</li> <li>Negotiate unit contingent offset purchase agreements.</li> <li>Current proof of concept in place to demonstrate carbon eligibility.</li> <li>Carbon sequestration rates attractive in Midwest region.</li> <li>Projected fund 4% IRR without carbon credit realization.</li> </ul>





# A Clear Execution Roadmap





## ADDRESS CLIMATE CHANGE

Approx. 340,000 tons of carbon returned to soil.

## REDUCE RISK TO FOOD SUPPLY

Regenerative outperforms conventional in floods and droughts.

## IMPROVE FARM AND SOIL VALUE

100,000 acres of soil with improved quality.

## STOP POLLUTING WATER

Nitrogen losses are 60%+ less in organic farming.





# Carbon Yield Team



**Claire Pluard**

Data Analysis and Social  
Impact Manager



- Impact Measurement and data visualization expert
- Local County, City, State topic advocacy and lobbying
- Over \$60M federal and state grant development and management



**David Mallett**

Associate, Consultant Relations



- Lead consultant relation efforts for DC asset management group with \$135B AUM
- Target date fund glidepath analysis in large plan market
- Go-to-market advisor managed account strategy



**Sam Schiller**

Founder and CEO



- Launched and scaled 2 carbon offset businesses
- Developed 21 carbon projects generating \$20MM+ in carbon revenue
- Delta Institute board member



**Tom Fields**

Senior Associate

**GOLUB CAPITAL**

- Corporate M&A underwriting and transaction structuring
- Private credit, private equity and real estate
- Distressed debt restructuring and operational turnarounds

**Additional Expertise:** The Carbon Yield Team will also seek external agronomy expertise, and those with experience with agricultural law, rural underwriting, and community reinvestment act investments.



# Appendix





# Advisors and Mentors

- **Ricardo Bayon** - Encourage Capital
- **Sheldon Zakresky** - The Climate Trust
- **David LeZaks, Ben Shorofsky** - Delta Institute
- **Kellee James** - Mercaris
- **Adam Chambers** - National Resource Conservation Service
- **Aldyen Donnelly** - NORI, Greenhouse Emission Management Commission
- **Stephanie Zhu** - Delta Airlines
- **Tom Trinley** - Donnelley Foundation
- **Julianna Paterra** - Marquette Advisors
- **Erin Heitcamp** - Pipeline Foods
- **Bruce Sherrick** - University of Illinois Urbana-Champaign
- **Summer Montacute** - Verified Carbon Standard
- **Various Midwest Farmers** - Bob Boettger, Tracy Williamson, John Clark



# Sensitivity of Carbon Yield Fund IRR to Key Variables

Projected Investor IRR Sensitivity to Carbon Prices and Sequestration Rates

Carbon Storage (Tons/Acre)	Carbon Price/Ton			
	\$3.00	\$5.00	\$7.00	\$9.00
0	4.0%	4.0%	4.0%	4.0%
1.5	6.3%	7.3%	8.4%	9.4%
2.5	7.3%	9.1%	10.8%	12.4%
3.4	8.3%	10.6%	12.8%	14.9%

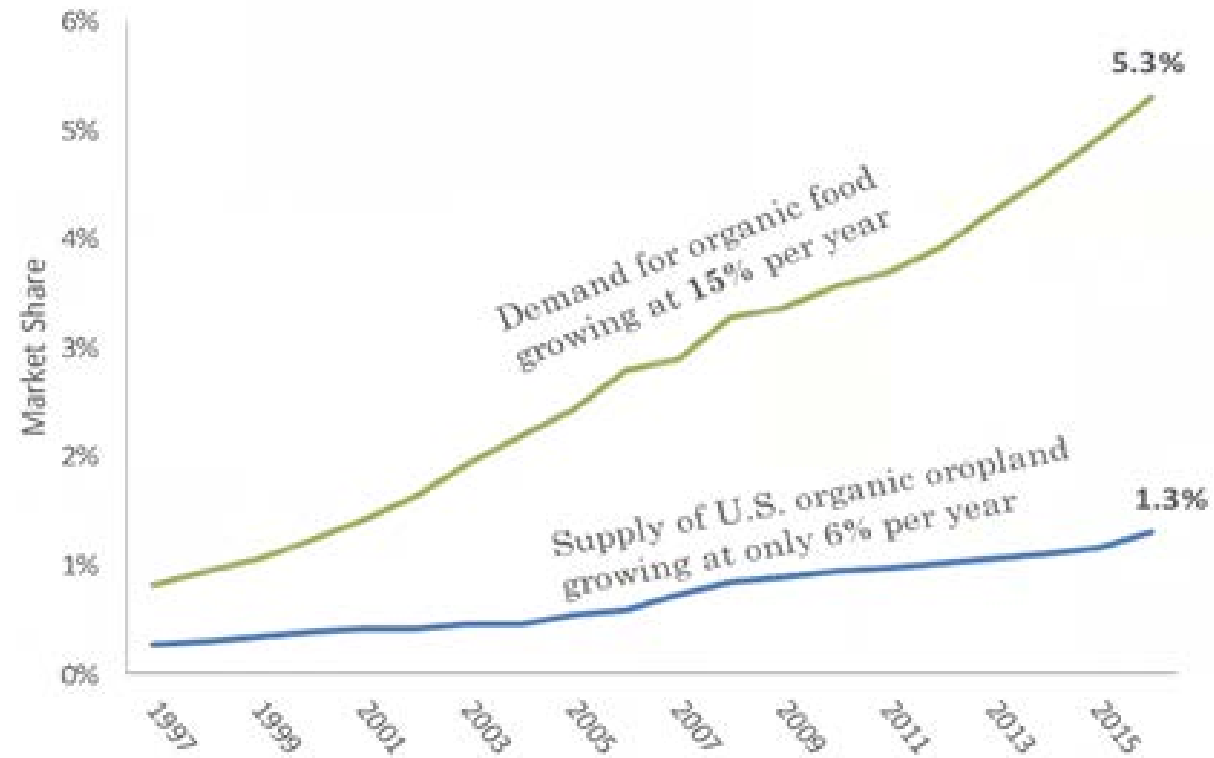
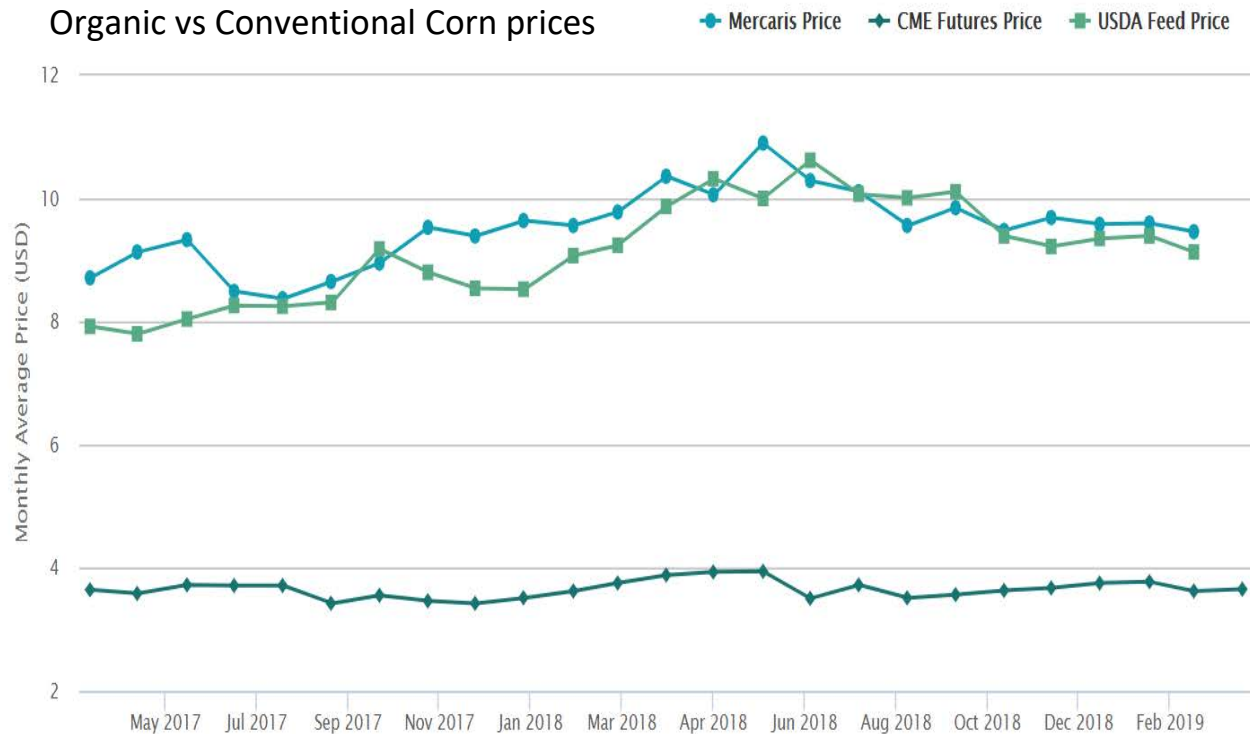
Projected Investor IRR Sensitivity to Default Rates and Effective Interest Rates to Farmers

Default Rate	Interest Rate To Farmers				
	5.0%	6.0%	7.0%	8.0%	9.0%
1.0%	10.6%	11.9%	13.2%	14.5%	15.9%
2.0%	10.2%	11.5%	12.8%	14.1%	15.5%
3.0%	9.8%	11.1%	12.4%	13.7%	15.0%
4.0%	9.4%	10.7%	12.0%	13.3%	14.6%
5.0%	9.0%	10.3%	11.6%	12.9%	14.2%

- Risk testing shows that while carbon credit revenue to the fund is projected to generate meaningful upside, investor return of capital and return generation (up to 4.0% IRR) is not dependent on carbon sequestration and pricing.
- Base case assumes a 7.0% effective interest rate to farmers and 2.0% default rate across all receivables (principal payments, interest and carbon revenue)



# Organic Price Premium



- Organic grains have traded at 50-200% premium to conventional grains since 1997
- Organic farms are more profitable with premiums as low as a 5-7%
- Organic demand growth expected to continue to outstrip organic supply throughout foreseeable future





# Airline Impact on Voluntary Offsets

- CORSIA – program ensures carbon neutral growth in international aviation
- Projected to generate 1.6-3.7 billion tons of emissions reductions
- Rules still being developed
- Delta Airlines already purchasing credits
  - Offsetting growth from 2012 baseline
  - Currently purchase 2-3MM tons/yr
  - 20% procurement growth in 2018

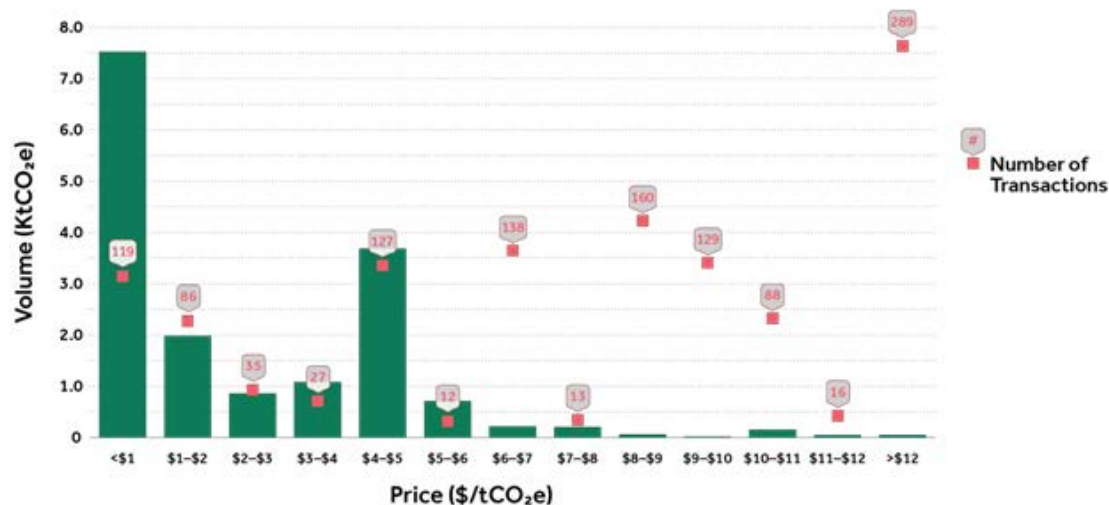




# Carbon Offsets in the Voluntary Market

- Significant 2017 uptick, due to Paris Agreement, new Corporate Commitments
- Ecosystem Marketplace has tracked average prices ranging between \$3-\$6/tCO<sub>2</sub>e, which is swewed significantly by cheap international forestry credits.
- Have spoken to brokers, project developers, and off takers who expect pricing of \$7-\$15 per ton for US offsets with co-benefits like Carbon Yield's targeted projects. Over 56% of transactions at >\$7/ton
- Financial model uses \$7 per ton.

Volume of Offsets Sold and Number of Transactions by Price, January – March 2018



Notes: The data is based on results from Ecosystem Marketplace's survey of project developers, retailers, and brokers conducted in Spring 2018. Based on 1206 transactions totaling 11.4 MtCO<sub>2</sub>e offsets reported between January – March 2018. See Annex I: Methodology for more information.

Historical Voluntary Carbon Offset Issuances and Retirements



Notes: Data is based on project registries from the following carbon standards: American Carbon Registry (ACR), Climate Action Reserve (CAR), Gold Standard, Plan Vivo, and Verra's Verified Carbon Standard (VCS) as of April 2018. Based on 401.5 MtCO<sub>2</sub>e offsets issued and 212.4 MtCO<sub>2</sub>e offsets retired between 2008 and 2017. Although there was some pre-2008 market activity, it is not included in this figure due to a lack of consistent, publicly-available information.





# Carbon Yield Investment Criteria

## Farm Investment Criteria:

- Owner-operated or professionally-managed grain farms with favorable track record
- Farms based in midwestern U.S. in areas with organic grain infrastructure
- Minimum farm size of 1,000 acres (target of 2,500 acres)
- Farmland is owned (not cash-rented)

## Investment Terms:

- Subject to Investment Committee approval, Carbon Yield provides operating loans up to \$400 per acre, deployable during three year transition period (total target investment of \$1mm per farm)
- Interest Rate of 7.0%; interest paid-in-kind during transition period
- 5 year loan amortization following transition period
- Maximum Loan to Value ratio of 60% (inclusive of other farm indebtedness, if any)
- Carbon Yield loans will be subordinate to existing mortgages & operating loans
- Carbon Yield will share in 50% of carbon credit revenue generated over 10 year period



# Target Investor Market-Family Offices

## Growing Demand for Impact

- Defined as generating a measurable social and/or environment impact alongside a financial return
- About one-in-three (32%) family offices now involved in impact investing
- Increase of 4.2% since 2017 in family offices' participation in impact investing
- Roughly half (54%) reported that they plan to increase their allocation in 2019
- Most common routes for impact investing
  1. Private Equity (67%)
  2. Equity (39%)
  3. Real Estate (27%)

## With Real Estate Exposure

- Family offices' third largest asset class (17%) in 2018
- Investments directed across Local (55%), Regional (25%) and International (20%) markets
- Top factors influencing real estate allocation
  1. Location
  2. Costs
  3. Tax/Regulation





# RBIC Vehicle and Target Investor Overview

- The Rural Business Investment Program was established by the U.S. Department of Agriculture to assist small business development across rural America.
- Rural Business Investment Corporations (RBICs) can access low-cost leverage (up to 2:1 for every equity dollar funded) via government-backed debentures provided by the USDA.
- RBICs must invest at least 75% of funds in rural areas with a population of 50,000 or less
- Banks and federal savings associations are incentivized to invest in RBICs/SBICs:
  - Receive Community Reinvestment Act credit for investments and typically receive exemptions from certain capital charge regulations and lending affiliation rules
  - Working through the USDA program enables funds to raise capital from Farm Credit System banks and associations
- Highly scalable: RBICs typically able to access up to \$105 million of debenture funding, with ability to increase funding via affiliate RBIC entities.

**RBIC Eligibility Map**





# Fund-Level Base Case Model

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	12 Year Totals
<b>Total Principal Cash Flow</b>	\$ (1,333,333)	\$ (6,333,333)	\$ (13,333,333)	\$ (11,109,395)	\$ (2,769,624)	\$ 8,906,054	\$ 8,906,054	\$ 8,906,054	\$ 8,015,449	\$ 4,675,679	\$ -	\$ -	
Interest Income	-	-	-	280,541	1,270,226	2,446,938	1,823,515	1,200,091	607,838	163,649	-	-	\$ 7,792,798
Carbon Mitigation Revenue	119,000	565,845	1,193,424	1,199,391	1,205,388	1,211,415	1,217,472	1,223,560	1,229,677	1,235,826	1,116,919	653,433	12,171,351
Total Gross Revenue	119,000	565,845	1,193,424	1,479,932	2,475,614	3,658,354	3,040,987	2,423,651	1,837,516	1,399,475	1,116,919	653,433	19,964,149
Less: Bad Debt Expense	(2,380)	(11,317)	(23,868)	(47,411)	(134,120)	(251,288)	(238,941)	(226,594)	(197,059)	(121,503)	(22,338)	(13,069)	(1,289,888)
<b>Total Net Revenue</b>	<b>116,620</b>	<b>554,528</b>	<b>1,169,556</b>	<b>1,432,521</b>	<b>2,341,495</b>	<b>3,407,066</b>	<b>2,802,046</b>	<b>2,197,056</b>	<b>1,640,456</b>	<b>1,277,972</b>	<b>1,094,581</b>	<b>640,364</b>	<b>\$ 18,674,261</b>
Less: Transaction Fees/Expenses	(80,000)	(225,000)	(210,000)	-	-	-	-	-	-	-	-	-	(515,000)
Less: Monitoring Fees	(10,000)	(10,200)	(10,404)	(10,612)	(10,824)	(11,041)	(11,262)	(11,487)	(11,717)	(11,951)	(12,190)	(10,000)	(131,687)
Less: Management Fee	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)	(127,702)	-	-	-	(2,127,702)
Less: Administrative Expenses	(2,380)	(11,317)	(23,868)	(29,599)	(49,512)	(73,167)	(60,820)	(48,473)	(36,750)	(27,989)	(22,338)	(13,069)	(399,283)
Less: RBIC Monitoring Fees	-	(8,566)	(40,531)	(105,453)	(158,971)	(168,775)	(88,917)	(9,750)	-	-	-	-	-
Less: RBIC Program Fees	(50,000)	(51,000)	(52,020)	(53,060)	(54,122)	(55,204)	(56,308)	(57,434)	(58,583)	(59,755)	(60,950)	-	-
Less: Interest Expense	(21,415)	(122,743)	(364,962)	(661,061)	(819,366)	(644,231)	(246,668)	(24,375)	-	-	-	-	(2,904,821)
<b>Total Fund Expenses (Pre-Incentive)</b>	<b>(413,795)</b>	<b>(678,826)</b>	<b>(951,785)</b>	<b>(1,109,785)</b>	<b>(1,342,795)</b>	<b>(1,202,419)</b>	<b>(713,975)</b>	<b>(401,519)</b>	<b>(234,752)</b>	<b>(99,695)</b>	<b>(95,478)</b>	<b>(23,069)</b>	<b>(7,267,893)</b>
<b>Total Operating Profit</b>	<b>(297,175)</b>	<b>(124,298)</b>	<b>217,770</b>	<b>322,736</b>	<b>998,700</b>	<b>2,204,647</b>	<b>2,088,071</b>	<b>1,795,537</b>	<b>1,405,705</b>	<b>1,178,277</b>	<b>999,103</b>	<b>617,295</b>	<b>11,406,367</b>
<b>Net Income</b>	<b>(297,175)</b>	<b>(124,298)</b>	<b>217,770</b>	<b>297,739</b>	<b>788,973</b>	<b>1,741,671</b>	<b>1,649,576</b>	<b>1,418,474</b>	<b>1,110,507</b>	<b>930,838</b>	<b>789,291</b>	<b>487,663</b>	<b>9,011,030</b>
<b>Beg. SBIC/Other Capital</b>	<b>-</b>	<b>(1,142,136)</b>	<b>(5,404,172)</b>	<b>(14,060,444)</b>	<b>(21,196,136)</b>	<b>(22,503,366)</b>	<b>(11,855,641)</b>	<b>(1,300,010)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Plus: Borrowings	(1,142,136)	(4,262,037)	(8,656,272)	(7,135,693)	(1,307,230)	-	-	-	-	-	-	-	(22,503,366)
Less: Repayments	-	-	-	-	-	10,647,726	10,555,630	1,300,010	-	-	-	-	22,503,366
<b>End. SBIC/Other Capital</b>	<b>(1,142,136)</b>	<b>(5,404,172)</b>	<b>(14,060,444)</b>	<b>(21,196,136)</b>	<b>(22,503,366)</b>	<b>(11,855,641)</b>	<b>(1,300,010)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Available Proceeds After Debt Repayment	-	-	-	-	-	-	-	9,024,518	9,125,956	5,606,517	789,291	587,663	
<b>Total Institutional Cash Flow</b>	<b>\$ (588,373)</b>	<b>\$ (2,195,595)</b>	<b>\$ (4,459,291)</b>	<b>\$ (3,675,963)</b>	<b>\$ (673,421)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 9,024,518</b>	<b>\$ 8,654,402</b>	<b>\$ 4,485,214</b>	<b>\$ 631,433</b>	<b>\$ 470,131</b>	<b>\$ 11,673,054</b>
<b>IRR</b>	<b>12.8%</b>												
<b>Management Incentive Payment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 471,554</b>	<b>\$ 1,121,303</b>	<b>\$ 157,858</b>	<b>\$ 117,533</b>	<b>\$ 1,868,248</b>





# Illustrative Midwest 5 Year Crop Rotation

		Transition Period			Certified Organic Pricing																
		Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10									
Crop Rotation			Corn	Soybean	Corn	Wheat	Alfalfa	Corn	Soybean	Corn	Wheat	Alfalfa									
Field 1			Corn	Soybean	Corn	Wheat	Alfalfa	Corn	Soybean	Corn	Wheat	Alfalfa									
Field 2			Soybean	Corn	Wheat	Alfalfa	Corn	Soybean	Corn	Wheat	Alfalfa	Corn									
Field 3			Corn	Wheat	Alfalfa	Corn	Soybean	Corn	Wheat	Alfalfa	Corn	Soybean									
Field 4			Wheat	Alfalfa	Corn	Soybean	Corn	Wheat	Alfalfa	Corn	Soybean	Corn									
Field 5			Alfalfa	Corn	Soybean	Corn	Wheat	Alfalfa	Corn	Soybean	Corn	Wheat									
	Acres																				
Field 1	500.00	\$	207,573	\$	147,406	\$	210,698	\$	165,524	\$	264,954	\$	591,137	\$	323,053	\$	600,037	\$	171,825	\$	275,040
Field 2	500.00		146,309		209,130		66,269		262,982		586,736		320,648		595,570		170,546		272,993		609,071
Field 3	500.00		207,573		65,776		181,533		582,368		318,261		591,137		169,276		270,961		604,537		330,376
Field 4	500.00		65,286		180,182		210,698		315,892		586,736		168,016		268,943		600,037		327,917		609,071
Field 5	500.00		178,840		209,130		148,512		582,368		166,765		266,941		595,570		325,476		604,537		173,114
Total Farm Revenue		\$	805,581	\$	811,623	\$	817,710	\$1,909,134	\$	1,923,453	\$	1,937,879	\$	1,952,413	\$1,967,056	\$1,981,809	\$1,996,672				

Sources: University of Minnesota, Mercaris, NRAES, USDA, Genetic Literacy Project



Carbon Yield



# Farm-Level Base Case Model

	Year 0 (Steady State)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year Total
<b>Revenue to Farmer</b>												
Farm Revenue From Operations	\$ 777,884	\$ 805,581	\$ 811,623	\$ 817,710	\$ 1,909,134	\$ 1,923,453	\$ 1,937,879	\$ 1,952,413	\$ 1,967,056	\$ 1,981,809	\$ 1,996,672	\$ 16,103,330
Carbon Mitigation Revenue	-	59,500	59,798	60,096	60,397	60,699	61,002	61,307	61,614	61,922	62,232	608,568
Less: Carbon Mitigation Revenue Sharing		(29,750)	(29,899)	(30,048)	(30,198)	(30,349)	(30,501)	(30,654)	(30,807)	(30,961)	(31,116)	(304,284)
<b>Total Net Revenue to Farmer</b>	<b>777,884</b>	<b>835,331</b>	<b>841,522</b>	<b>847,759</b>	<b>1,939,333</b>	<b>1,953,802</b>	<b>1,968,380</b>	<b>1,983,066</b>	<b>1,997,863</b>	<b>2,012,770</b>	<b>2,027,788</b>	<b>16,407,614</b>
Loan Origination Fees		6,600	6,600	6,600								
Total Farm-Level Expenses	770,863	976,906	996,444	1,016,373	1,036,700	1,057,434	1,078,583	1,100,155	1,122,158	1,144,601	1,167,493	10,696,848
<b>Farm Net Operating Income</b>	<b>7,021</b>	<b>(148,175)</b>	<b>(161,522)</b>	<b>(175,214)</b>	<b>902,632</b>	<b>896,368</b>	<b>889,797</b>	<b>882,912</b>	<b>875,705</b>	<b>868,169</b>	<b>860,295</b>	<b>5,690,966</b>
<b>Farm Free Cash Flow</b>	<b>5,547</b>	<b>(290,868)</b>	<b>(300,117)</b>	<b>(314,849)</b>	<b>655,039</b>	<b>644,355</b>	<b>651,321</b>	<b>658,038</b>	<b>664,500</b>	<b>664,544</b>	<b>658,165</b>	<b>3,690,129</b>
Increase (Decrease) in Carbon Yield Debt	-	333,333	333,333	333,333	(222,651)	(222,651)	(222,651)	(222,651)	(222,651)	-	-	(113,257)
<b>Total Change in Cash</b>	<b>5,547</b>	<b>42,465</b>	<b>33,216</b>	<b>18,485</b>	<b>432,388</b>	<b>421,704</b>	<b>428,670</b>	<b>435,387</b>	<b>441,849</b>	<b>664,544</b>	<b>658,165</b>	<b>3,576,872</b>
<b>Ending Farm Cash Balance</b>	<b>5,547</b>	<b>42,465</b>	<b>75,681</b>	<b>94,166</b>	<b>526,554</b>	<b>948,257</b>	<b>1,376,927</b>	<b>1,812,314</b>	<b>2,254,163</b>	<b>2,918,708</b>	<b>3,576,872</b>	<b>3,576,872</b>
<b>Carbon Yield Loan Schedule</b>												
Beginning Balance		-	345,423	715,903	1,113,257	890,605	667,954	445,303	222,651	-	-	-
PIK Interest		12,090	37,146	64,021								113,257
Principal (Repayment) Funding		333,333	333,333	333,333	(222,651)	(222,651)	(222,651)	(222,651)	(222,651)	-	-	(113,257)
Ending Balance		345,423	715,903	1,113,257	890,605	667,954	445,303	222,651	-	-	-	-
Interest Expense		12,090	37,146	64,021	70,135	54,550	38,964	23,378	7,793	-	-	308,077
		<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>	<b>Year 8</b>	<b>Year 9</b>	<b>Year 10</b>	
<b>Cash Flows to Carbon Yield</b>												
Principal Payment (Funding)		(333,333)	(333,333)	(333,333)	222,651	222,651	222,651	222,651	222,651	-	-	113,257
Cash Interest		-	-	-	70,135	54,550	38,964	23,378	7,793	-	-	194,820
Carbon Mitigation Revenue Share		29,750	29,899	30,048	30,198	30,349	30,501	30,654	30,807	30,961	31,116	304,284
<b>Total Carbon Yield Cash Flow to Investors</b>		<b>\$ (303,583)</b>	<b>\$ (303,435)</b>	<b>\$ (303,285)</b>	<b>\$ 322,985</b>	<b>\$ 307,550</b>	<b>\$ 292,117</b>	<b>\$ 276,683</b>	<b>\$ 261,251</b>	<b>\$ 30,961</b>	<b>\$ 31,116</b>	<b>\$ 612,361</b>
<b>Carbon Yield Farm-Level IRR</b>	<b>13.2%</b>											





# Farmer Stressed Case

	Year 0 (Steady State)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year Total
Revenue to Farmer												
Farm Revenue From Operations	\$ 777,884	\$ 805,581	\$ 811,623	\$ 817,710	\$ 1,429,585	\$ 1,440,307	\$ 1,451,109	\$ 1,461,992	\$ 1,472,957	\$ 1,484,004	\$ 1,495,134	\$ 12,670,004
Carbon Mitigation Revenue	-	59,500	59,798	60,096	60,397	60,699	61,002	61,307	61,614	61,922	62,232	608,568
Less: Carbon Mitigation Revenue Sharing		(29,750)	(29,899)	(30,048)	(30,198)	(30,349)	(30,501)	(30,654)	(30,807)	(30,961)	(31,116)	(304,284)
Total Net Revenue to Farmer	777,884	835,331	841,522	847,759	1,459,783	1,470,656	1,481,610	1,492,646	1,503,764	1,514,965	1,526,250	12,974,288
Loan Origination Fees		6,600	6,600	6,600								
Total Farm-Level Expenses	770,863	976,906	996,444	1,016,373	1,036,700	1,057,434	1,078,583	1,100,155	1,122,158	1,144,601	1,167,493	10,696,848
Farm Net Operating Income	7,021	(148,175)	(161,522)	(175,214)	423,083	413,222	403,027	392,491	381,606	370,364	358,757	2,257,640
Farm Free Cash Flow	5,547	(290,868)	(300,117)	(314,849)	277,449	319,357	272,003	275,876	279,471	276,628	267,338	1,062,288
Increase (Decrease) in Carbon Yield Debt	-	333,333	333,333	333,333	(222,651)	(222,651)	(222,651)	(222,651)	(222,651)	-	-	(113,257)
Total Change in Cash	5,547	42,465	33,216	18,485	54,798	96,706	49,352	53,224	56,820	276,628	267,338	949,032
Ending Farm Cash Balance	5,547	42,465	75,681	94,166	148,964	245,669	295,021	348,246	405,065	681,693	949,032	949,032

- Downside case projects that with a 50% reduction in organic premium (as reflected above), farmers generate sufficient cash flow to repay carbon yield loans while also retaining improved economics relative to steady state conventional farming.
- Net Carbon credit revenue reflects 2.4% of farmer's revenue; not expected to pose meaningful downside risk to farmers
- Assumes insurance products available to address crop failure concerns



# Carbon Yield Product Scalability

## Operational Scalability:

- **Domestic:** in addition to the 28,882 Midwest grain farms larger than 1,000 acres, there are over 229M acres annual planted in cash grains outside the Midwest.
  - Per NRCS, out of the thousands farms that apply for aid associated with regenerative or organic practices, approximately 85% of those needs are currently un-met.
- **International:** Analysis of 40 years of historical data show that organic premiums and profits have consistently exceeded conventional approaches.
  - Carbon Yield provides an internationally scalable financial product suitable for countries with established carbon markets (voluntary or mandatory)
  - **Australia:** Top target for initial international expansion, with ~55.1 million acres of commercial grain and growing carbon markets.
- **Required Resources:** Expansion of the Carbon Yield product would require local market expertise (both agricultural and carbon-based)

## Financial Scalability:

- RBIC program provides domestic ability to scale debenture funding up to \$105 million as of October 2018
- Illustrative larger fund structures could be achieved through a CLO securitization or alternative structure with floating rate loans

## Alternative Financial Structure:

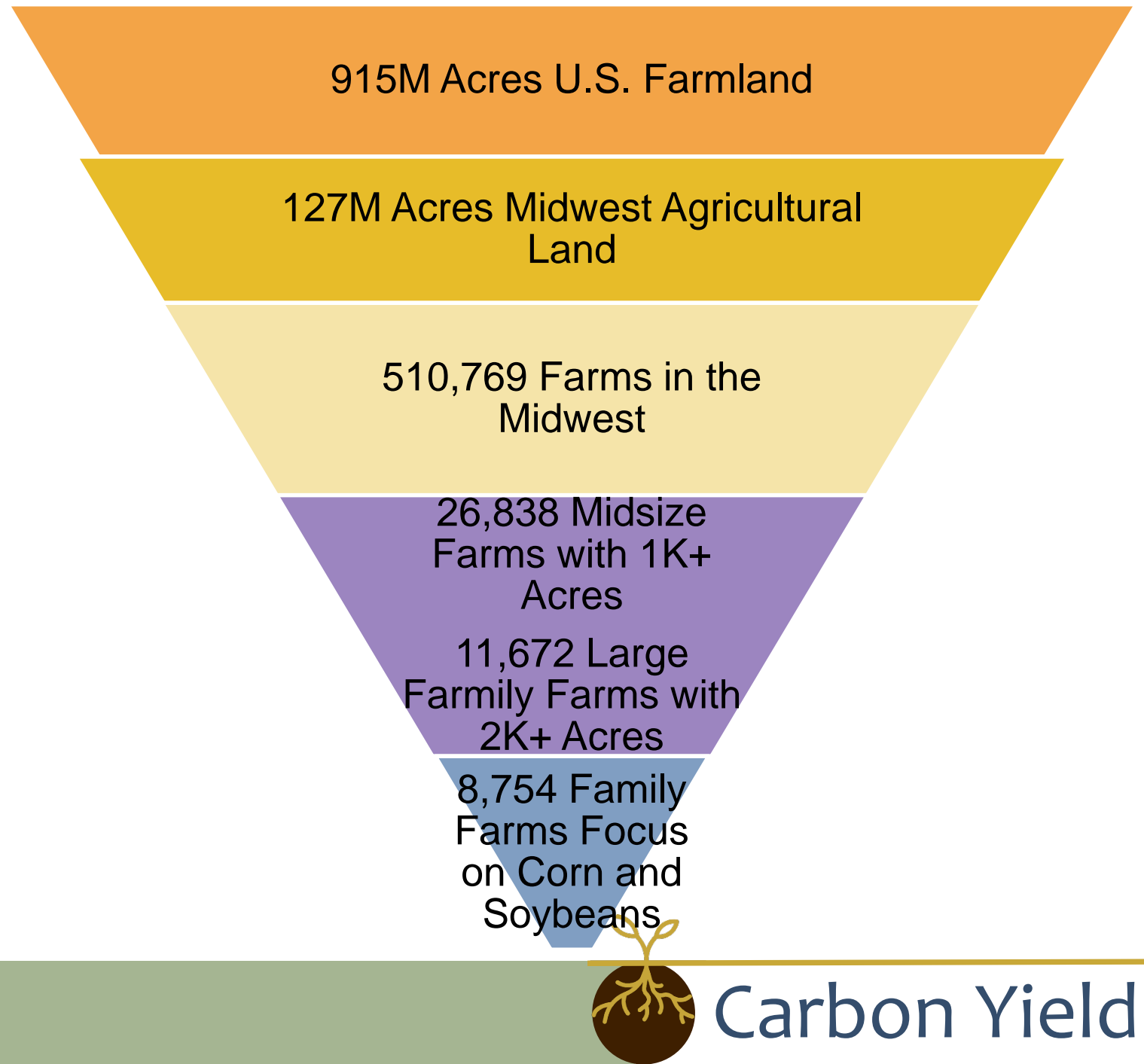
Illustrative CLO Securitization	
Carbon Yield Farmer Loans (Floating Rate):	Libor + 4.75%
CLO Equity Tranches:	\$100 million
Equity Sources:	Institutional Capital and Family Offices
Target Equity IRR (Net of Fees):	10-12%
CLO Debt Financing	\$300 Million
CLO Debt Sources:	Institutional Capital and Global Banks
Weighted Average Cost of Debt:	L + 2.40%

*Sources: Center for Research on Sustainable Agricultural and Rural Development, Australian Export Grains Innovation Centre, various market sources*





# Midwest Farming Market Analysis





# Presentation and Prospectus Citations

Beach, Jed, Organic Grain Collaborative, Understanding US Organic Grain Production, (2017).

“Corn and Soybean Budgets for 2018 and 2019: Low Returns Ahead • Farmdoc Daily.” Farmdoc Daily, 7 Aug. 2018, [farmdocdaily.illinois.edu/2018/08/corn-soybean-budgets-2018-2019.html](http://farmdocdaily.illinois.edu/2018/08/corn-soybean-budgets-2018-2019.html)

Crowder, David W and Reganold John P. Financial competitiveness of organic agriculture. Proceedings of the National Academy of Sciences Jun 2015, 112 (24) 7611-7616; DOI:10.1073/pnas.1423674112

Hawken, Paul. *Drawdown: the Most Comprehensive Plan Ever Proposed to Reverse Global Warming*. Penguin Books, 2018.

Lyandres, Olga, et al. Getting Down to the Roots: A Soil Strategy for Illinois. Delta Institute (2017). [https://delta-institute.org/delta/wp-content/uploads/12-15-17-Part-3\\_Soil-Carbon-Strategy-Report.pdf](https://delta-institute.org/delta/wp-content/uploads/12-15-17-Part-3_Soil-Carbon-Strategy-Report.pdf)

Montgomery, David R. *Growing a Revolution: Bringing Our Soil Back to Life*. W.W. Norton & Company, 2018.

“Mercaris.” *Mercaris*, [mercaris.com/organizations/2117/report/price\\_series](http://mercaris.com/organizations/2117/report/price_series).

Organic Trade Association, State of the Industry (2016)

“Welcome to the ‘4 per 1000’ Initiative.” *4p1000*, [www.4p1000.org/](http://www.4p1000.org/).

Yu, Z, Lu, C, Cao, P, Tian, H. Long-term terrestrial carbon dynamics in the Midwestern United States during 1850–2015: Roles of land use and cover change and agricultural management. *Glob Change Biol*. 2018; 24: 2673– 2690. <https://doi.org/10.1111/gcb.14074>



## Carbon Yield