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Hello!

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Carbon Credits

Carbon Markets

What Makes Regeneration & Ag Carbon Different?

The Future Of Farm Based Carbon

A Model Approach


4
The New Carbon Credits
&
Carbon Markets

Under Regenerative Management

US row crop land can sequester **350 M tons** of CO2e a year for an estimated annual market value of **$3B - $5.2 B** while **increasing** profitability over time.

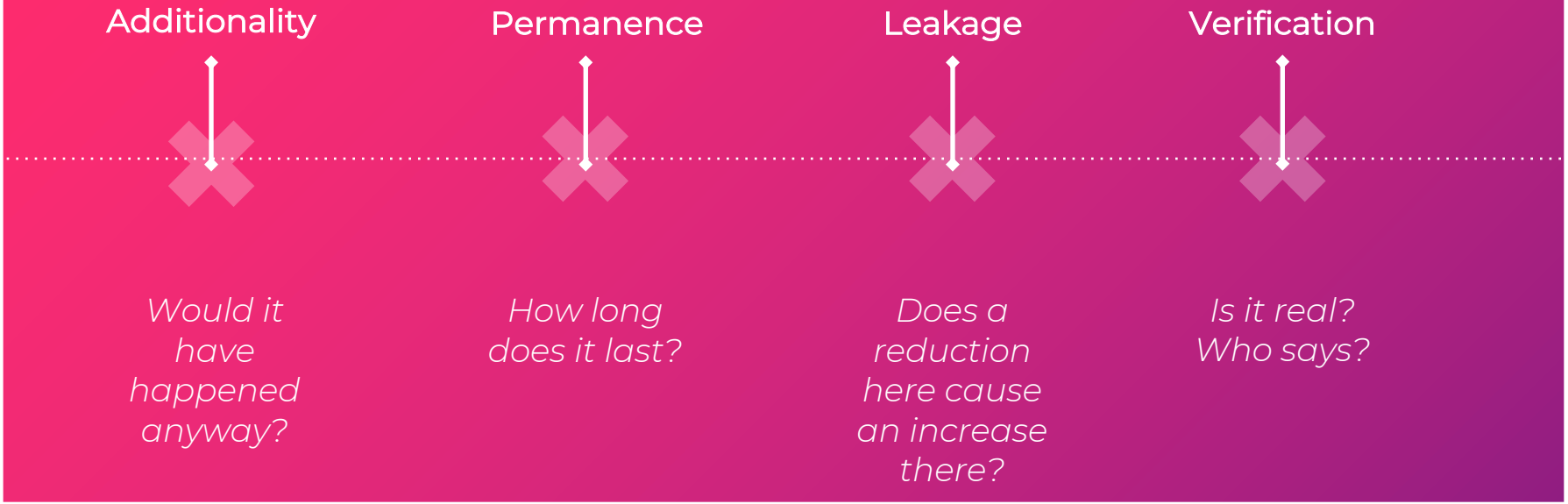
Proper Rotation | Winter Cover | Minimum Till | No Till

1 tonne.
2204 lbs

A Carbon Credit represents one tonne of carbon dioxide equivalent (tCO2 e) that has not been emitted into the environment.

Understanding Carbon Credits

What is a carbon offset?



Understanding Carbon Credits

How are carbon offsets generated?

Carbon credits are generated by reducing greenhouse gases by avoiding emissions and/or by sequestering carbon dioxide already in the atmosphere.

What Are Carbon Marketplaces?

Understanding Carbon Markets

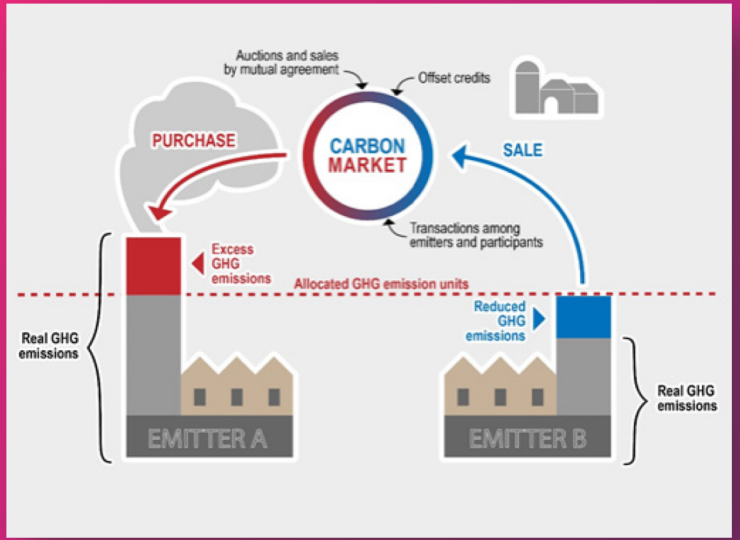
How are carbon offsets bought & sold?

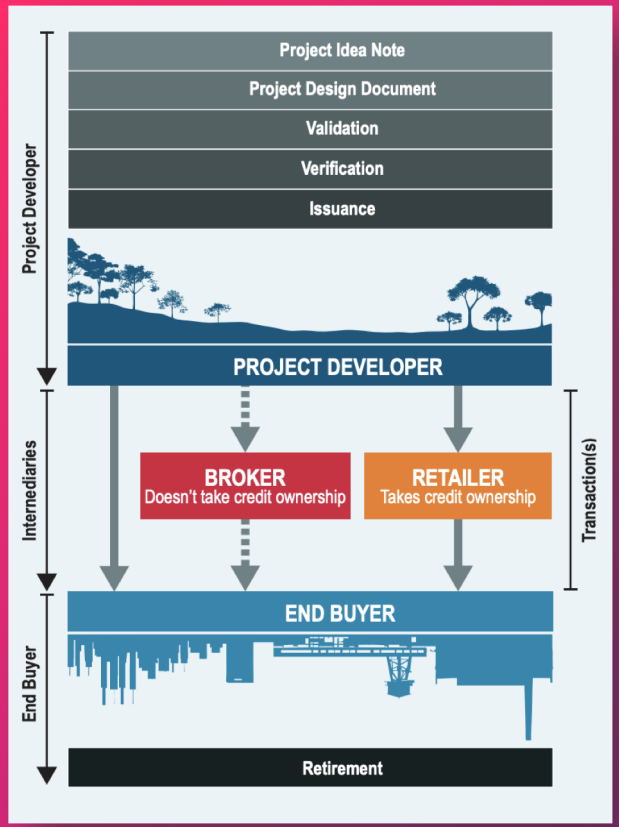
Compliance Carbon Markets

Carbon allowances are the legal right to emit.

2019 compliance markets generated **8.73 Billion** carbon credits for a value of **$215 Billion**.

Compliance Markets have been **rapidly scaling** since the adoption of the Kyoto Protocol in 2008.





Voluntary Carbon Markets

Carbon offsets are credits from mitigation efforts somewhere in the world

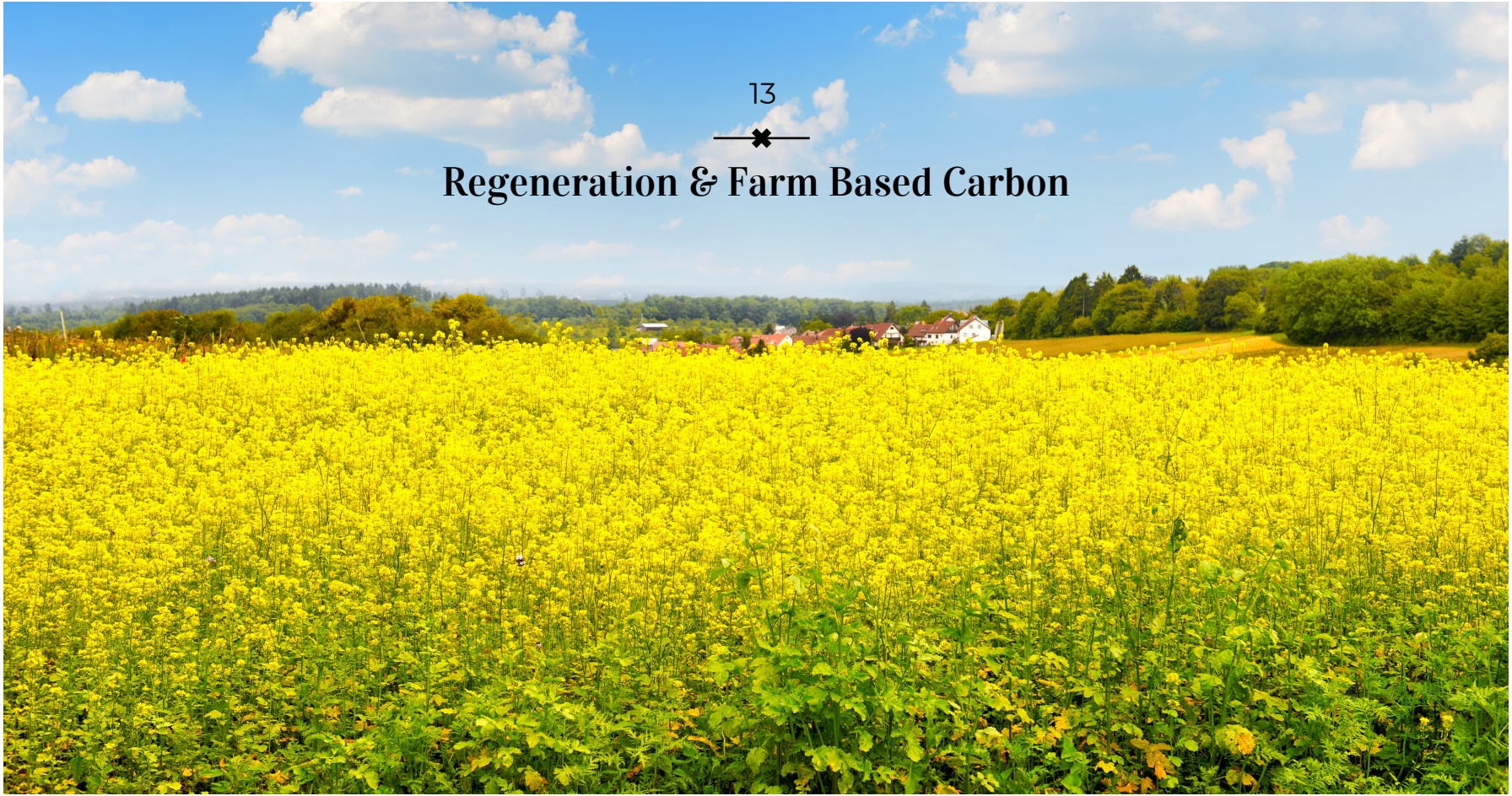
2018 voluntary markets generated **98.4 million** carbon credits for a value of **$295.7 Million**.

Average pricing of voluntary credits runs between $9-$20 with wide ranges.

Demand is exploding

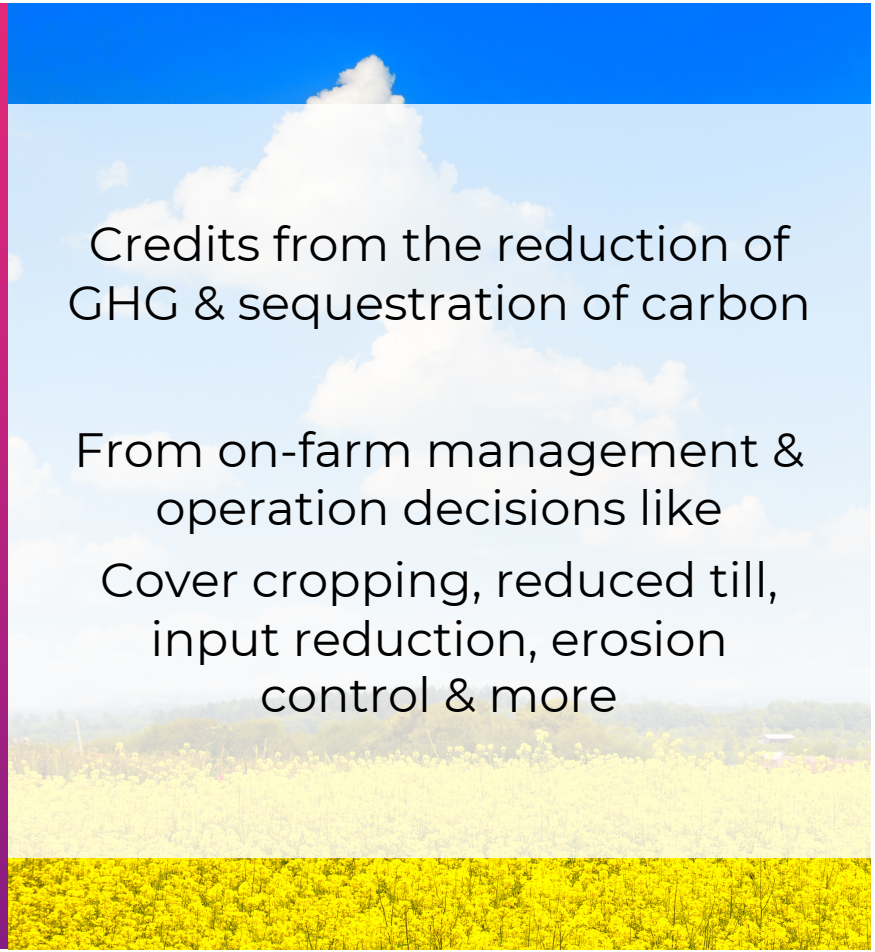
13

Regeneration & Farm Based Carbon



Understanding Ag Carbon Credits

What are farm based carbon credits?



Credits from the reduction of GHG & sequestration of carbon

From on-farm management & operation decisions like

Cover cropping, reduced till, input reduction, erosion control & more

Understanding Ag Carbon Credits

How are farm based credits quantified?

1. Truth, simulate, model & report the carbon footprint under a traditional baseline set of practices

2. Truth, simulate & report with a regenerative set

3. Determine the difference between the two.

Understanding Ag Carbon Credits

How is a farm based carbon footprint calculated?

Models are based on years of field trial analysis and mathematical representations of the mechanisms governing biological, chemical, geological, and hydrological processes.

Bring together

- Key Guidelines
- Established Process Models
- Rich Soil & Weather Data
- Cutting Edge Technology

IPCC
SALUS | DAYCENT |
COMETFARM | DNDC

Understanding Ag Carbon Credits

How is a farm based carbon verified?

Carbon sequestration is verified by confirming that the practices leading to reduction & sequestration actually happened & that soil carbon is sequestered .

Two forms of verification can take place together or separately.

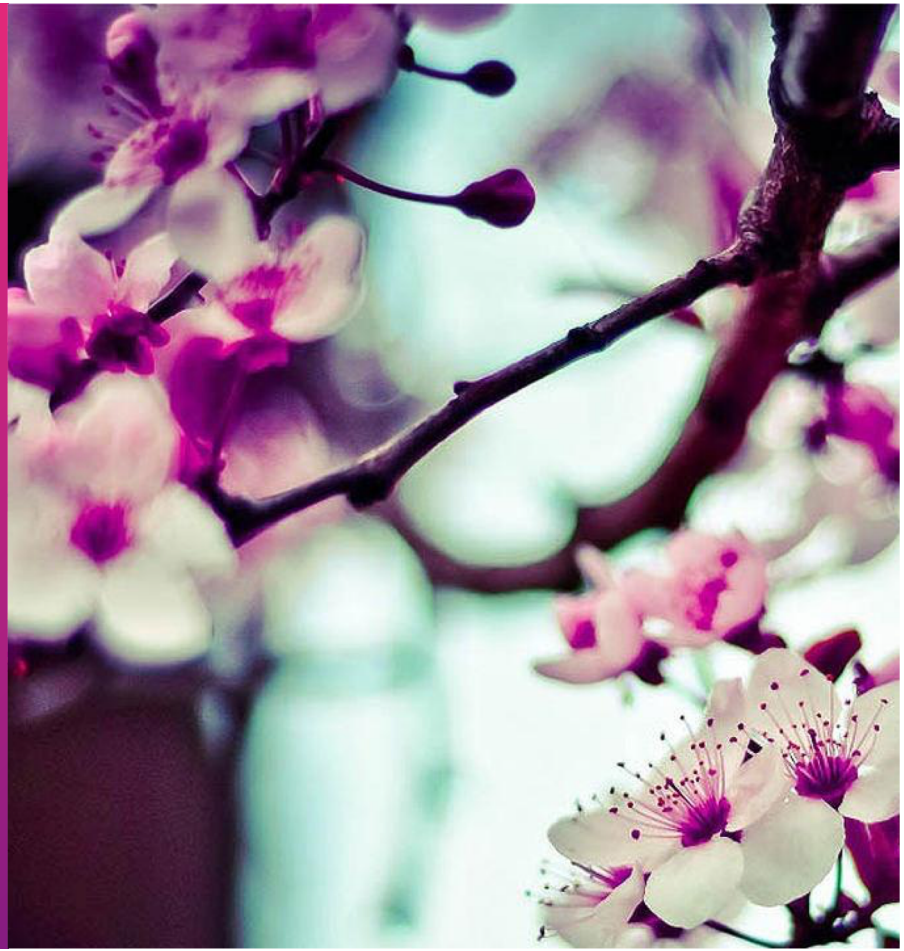
Verification of Practice

Verification of Sequestration

The Future Of Farm Based Carbon

A New Approach Is Needed

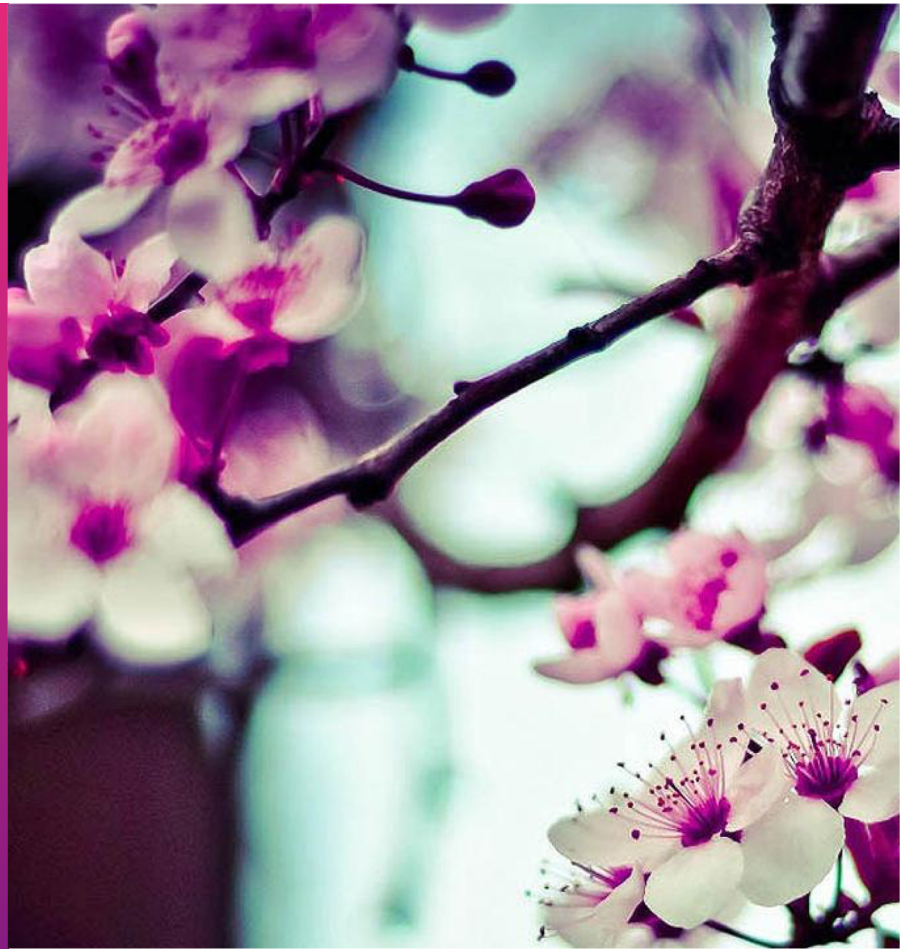
Accelerating adoption of regenerative practices requires a new approach that supports the needs of farmers



The USDA Agrees

"..this carbon market is not designed and set up for farmers.

The actual payments are not necessarily significant – not enough anyways to compensate for the hassle that's connected with the carbon market."
-Secretary Vilsack



The Big But…

Driven By Consumer Demand & Corporate ESG Goals

More companies are making carbon & climate commitments in the board room

That must be brought to life at the farm gate

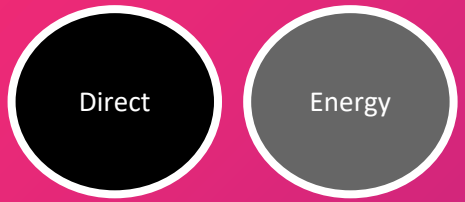
Reducing Carbon Footprint Across The Supply Chain

The Big But…

Scope 1, 2, & 3 Emissions

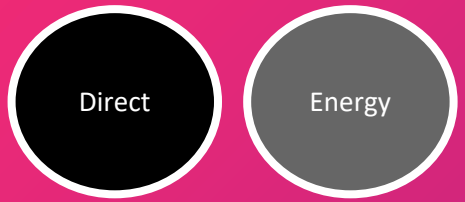
The Big But…

Scope 1, 2, & 3 Emissions



The Big But…

Scope 1, 2, & 3 Emissions



The Supply Chain

The Big But…

Scope 1, 2, & 3 Emissions

Carbon Credits Do Not Offset The Supply Chain

Sustainable agricultural practices are economically & environmentally aligned

ENVIRONMENTAL IMPACT

- Reduce GHG
- Reduce nitrogen leaching
- Reverse topsoil loss
- Remove low-return land from production

ECONOMIC IMPACT

- Improve productivity and yield
- Reduce input costs over time
- Improve land valuation
- Higher-priced commodities
- Carbon credit sales

But Wait...
What are the challenges?

FARMING CHALLENGES

- Schedule Disruption
- Equipment
- Confusion / Complexity
- Not The Way We've Done It
- Perverse Incentives

ECONOMIC CHALLENGES

- High Startup Costs
- Yield Decreases
- Risk – My Practice Wont Count
- Risk – Lack of Demand
- It's just not worth it

The Need for A Grower-Focused Carbon Program

How Carbon Programs Help & Hurt Growers

Grower Goals	Helps	Hurts
Risk Management	• Pay for practice • Share in up-side	• Carbon market uncertainty
ROI	• Share in up-side	• Low per-acre payments • Carbon prices
Cash Flow Management	• Pay for practice • Up-front payments / bonuses • Historical payments	• Delayed payments • Up-front costs
Flexibility	• Short-term contracts • Opt-out or flexibility for acts of G-d	• Long-term contracts • Penalties for plowing or failed cover crop
Market confidence in carbon credits	• 3rd-party registry verified	• Not 3rd-party verified

How Existing Programs Stack Up

Feature	Number of programs (not including CIBO) out of 12 that offer feature
Pay for practice	1
Sign-up bonus	2
Historical payments (>2 years)	3
Up-side for farmers as carbon prices increase	5
Contract is 5 years or less	5
No up-front out of pocket costs (e.g., testing or software)	5
Working with a major 3rd party registry	6

*Contact CIBO for details of these programs.

The Problem

Many growers are reluctant to participate in nascent carbon markets.

Risk
Carbon markets today require that growers take on significant risk over the first few years, with the promise of a future payment that may or may not materialize.

Delayed payments
Carbon credits typically take ~2 years to mature from the time that a grower first adopts a practice.

Low payments
Average per-acre payments for carbon are well below the true cost of adopting new practices.

Long-term agreements
Most carbon markets require farmers to commit to unrealistic long-term contracts up to 10 years or more.

Signing away rights to carbon credits
Growers are reluctant to sign on to a long-term program that requires them to give away rights to their carbon credits.

Registered credits
Buyers of carbon offsets are risk averse and prefer third party certification through a major registry. At this time, there are no registry-approved soil-carbon projects available and off-registry credits haven't gained buy-side traction.

The Opportunity

Growers will adopt practices with the right incentives.

Pay for practice

72% of growers say that cost share or financial incentive would encourage them to adopt cover crops.

Addressing delays to cost reduction

75% of growers say they'd be more likely to use cover crops if it helped reduce inputs. Roughly half of cover crop users saw reduced fertilizer costs and over 95% saved on herbicide costs. Farmers are likely to realize benefits to their soils and farm operations within 2 to 3 years.

Support during the early-year learning curve

Farmers may need to experiment with species types and seeding methods in the first 3-5 years of cover crop adoption. Agronomist support can shorten the learning period and improve chances of success early on.

Model Solution: The Carbon Bridge

Enterprise sponsors bridge the gap
To Incentivize & Pay Growers For Regenerative Practices
Enterprises gain access to high quality carbon credits and/or reduced Scope 3 emissions.

CIBO Carbon Bridge

Sponsors provide an incentive that will actually promote adoption

Enterprise sponsors pay for practices based on the amount that most growers have indicated they'd require to make the change. These numbers are based on grower surveys.

Ensure success with agronomic support

Soil health is crucial to positive financial outcomes for growers and enterprises. CIBO Carbon Bridge requires agronomic support to ensure that growers adopt the right practices in the right places at the right times.

Sponsor incentives serve as pre-payment for carbon

3 years of Bridge payments earn sponsor the rights to 3 years of high-quality Verra-registered carbon credits to retire or sell. Bridge payments also allow the sponsor to claim supply chain rights to a given field and its associated yield. This is crucial for the purposes of Scope 3 emissions management as well as product labeling.

Year 5 and beyond: Sponsor has first right of refusal

Growers start to generate their own carbon credits in Year 4 (available Year 5); Sponsors have first right of refusal to purchase these credits at market rate.

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