



Agricultural Excellence – Securing Your
Farm Future
Carbon Markets in Agriculture

How Do We Find and Hold to Common Ground?

Sustainable

Regenerative

The Third Way

Organic

Conventional

6 Core Principles of **REGENERATIVE AGRICULTURE**



<http://www.generalmills.com/en/Responsibility/Sustainability/Regenerative-agriculture>

Regenerative Agriculture is a system of farming principles and practices that increases biodiversity, enriches soils, improves watersheds, and enhances ecosystem services. Regenerative Agriculture aims to capture carbon in soil and aboveground biomass, reversing current global trends of atmospheric accumulation. At the same time, it offers increased yields, resilience to climate instability, and higher health and vitality for farming and ranching communities. The system draws from decades of scientific and applied research by the global communities of organic farming, agroecology, Holistic Management, and agroforestry.

Red Deer River Ranches – Carbon Sequestration with Beef Cattle

- A systematic approach to carbon farming through Adaptive Multi Paddock grazing
- Precision grazing using curvilinear high tensile electric fence and gravity fed water system
- 300% increase in forage production and utilization over 3 years with no synthetic fertilizer or herbicide use
- Driving improvement in functional soil health
- Improving profitability
- Access to carbon markets

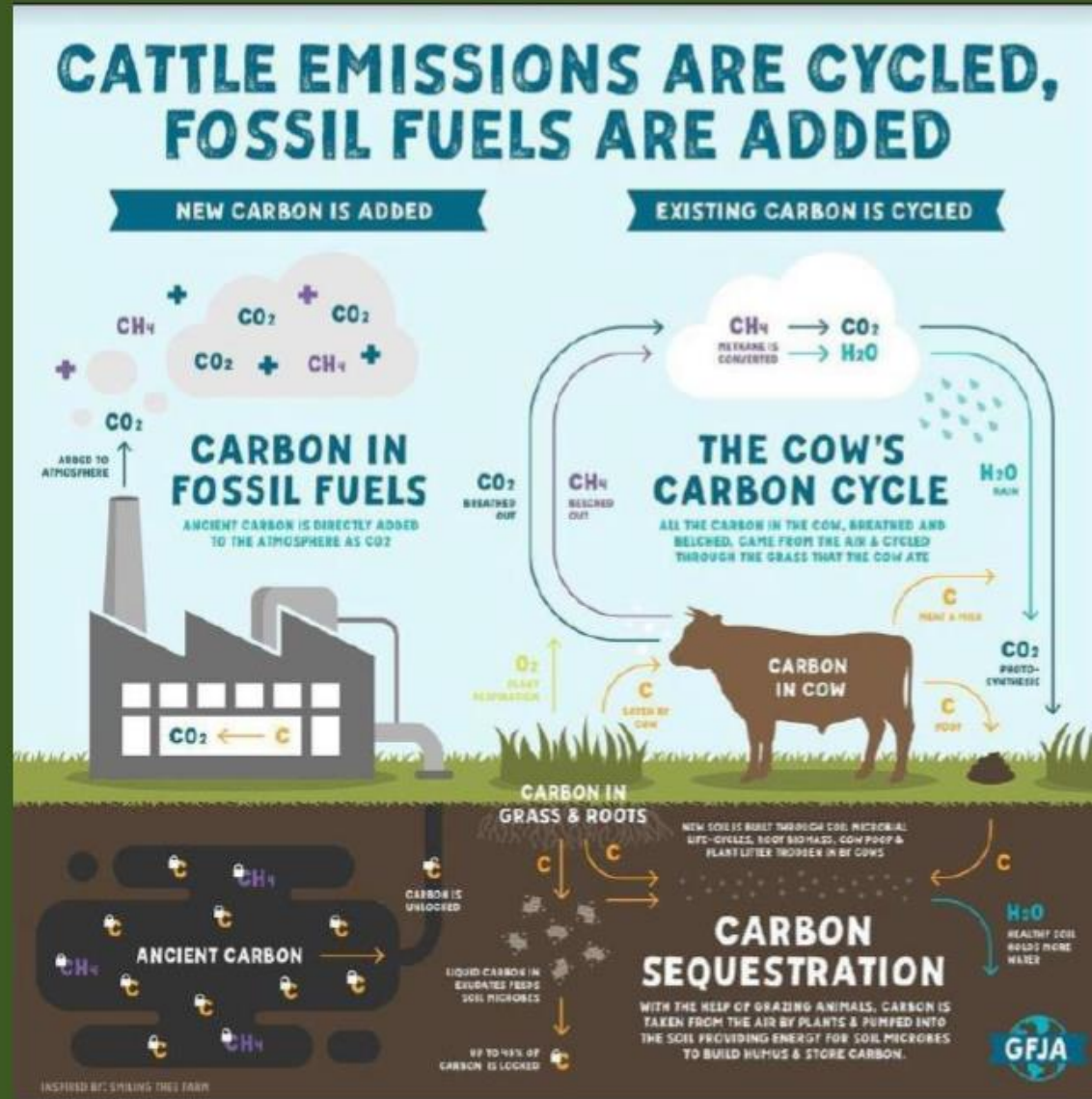


Jason Bradley's Crop Cocktail at Olds College Smart Farm-2019



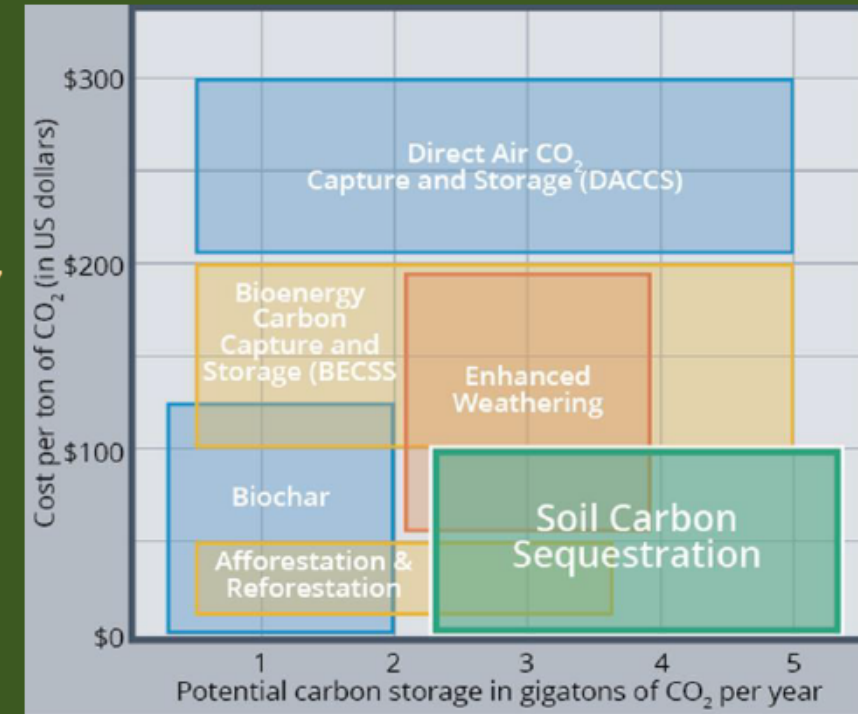
Cattle as a tool for additional soil carbon sequestration

It's not the cow, it's the how!

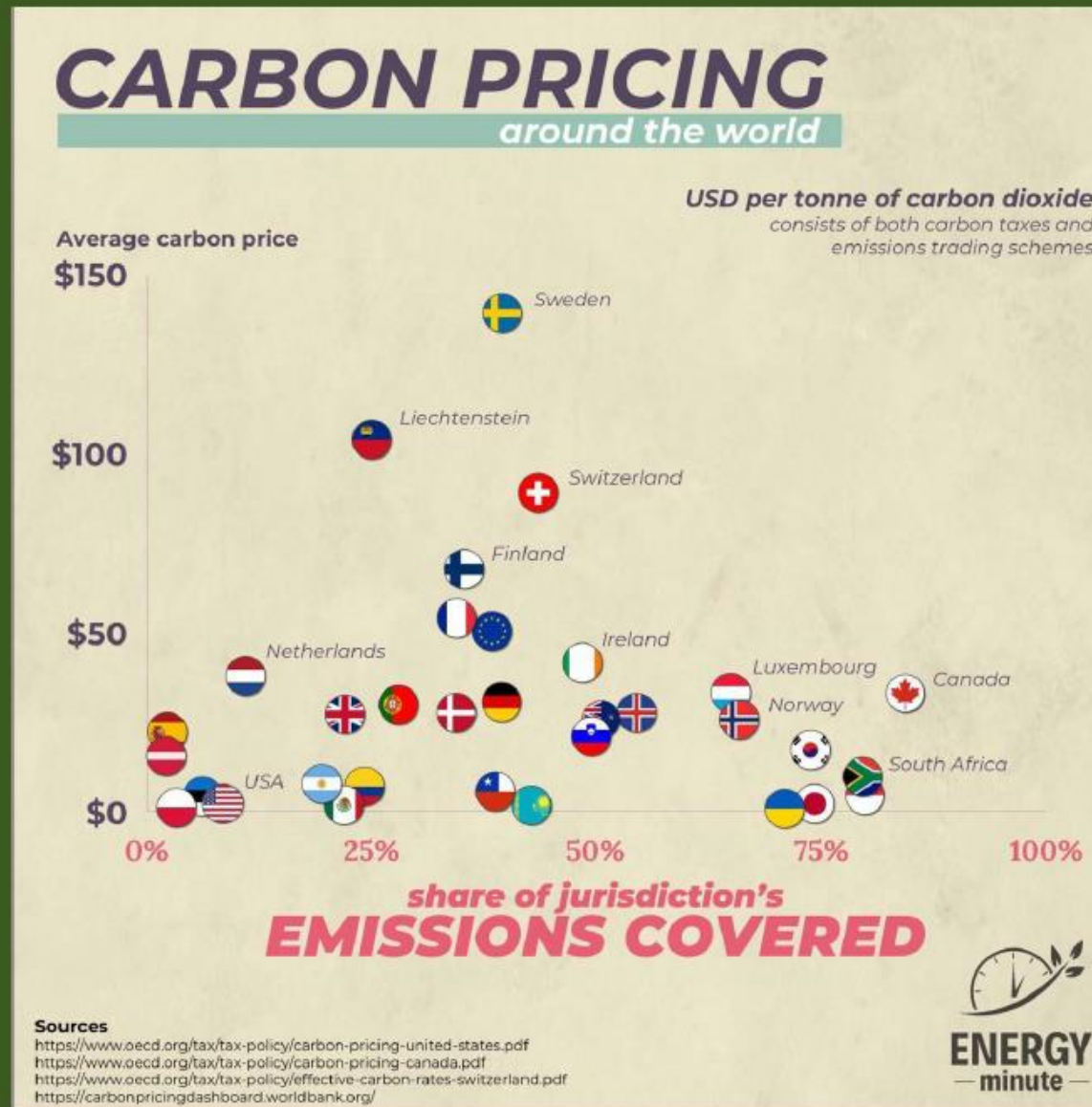


Opportunities for agriculture in carbon markets

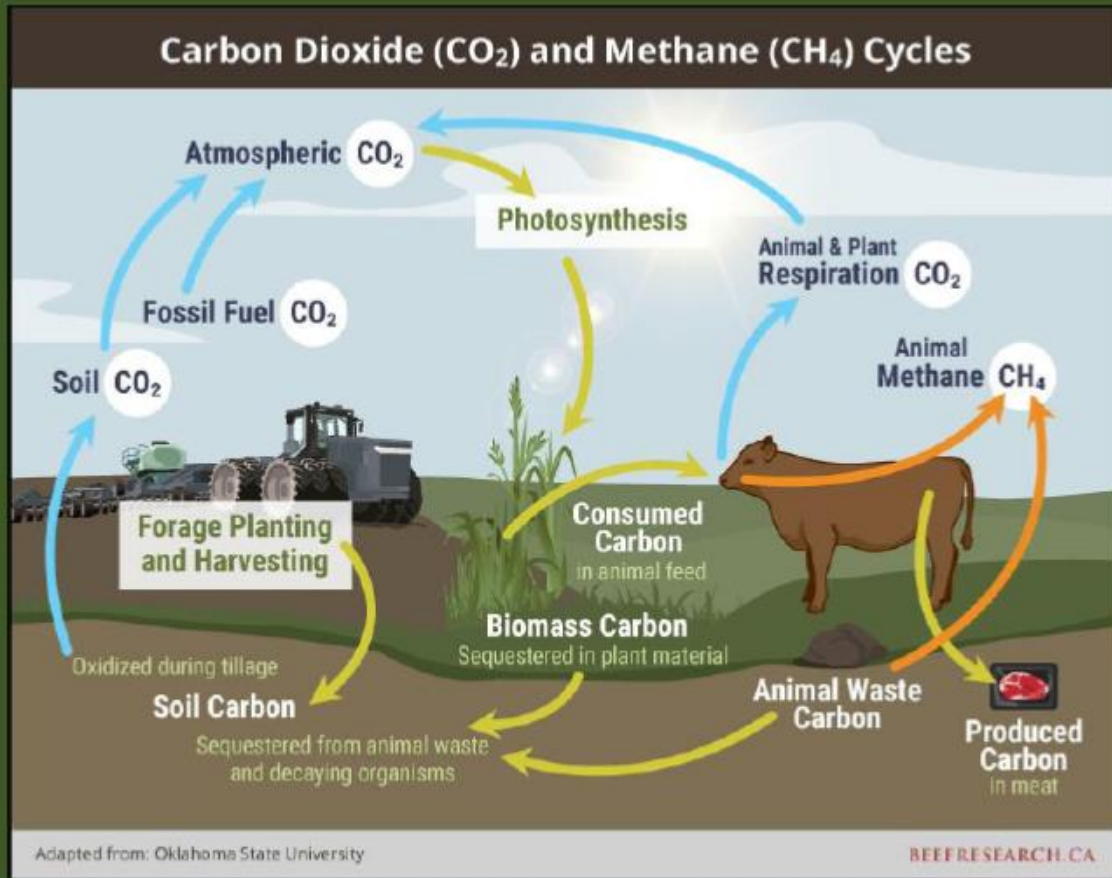
- Global imbalanced carbon cycle
- Unavailable or inefficient mechanisms for Carbon Removal Units to be measured, recorded, verified, and made available as Carbon Offset/Inset Credits
- No existing pathway to connect agricultural soil carbon sequestration to global capital markets to stimulate the flow of capital
- Carbon taxation is inefficient
- Reduction in the nutrient density of food
- Extractive primary agriculture practices leading to continuously decreasing functional soil health and increasing soil loss
- Farm productivity and profitability challenges
- A farmer focused soil carbon Measurement/Recording/Verification platform does not exist
- Precise and scalable soil carbon measurement technology not available



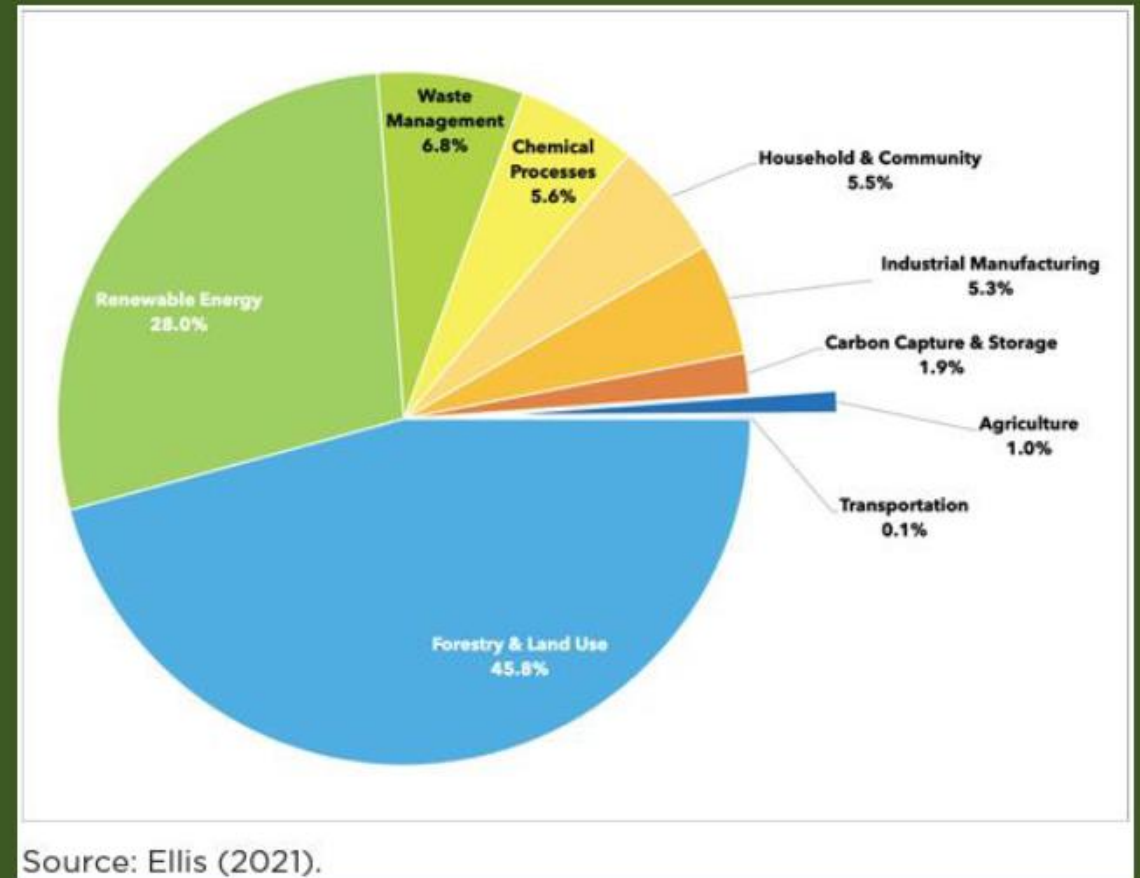
Canada has favourable carbon pricing...



What is the opportunity for carbon credit generation in the ag sector?

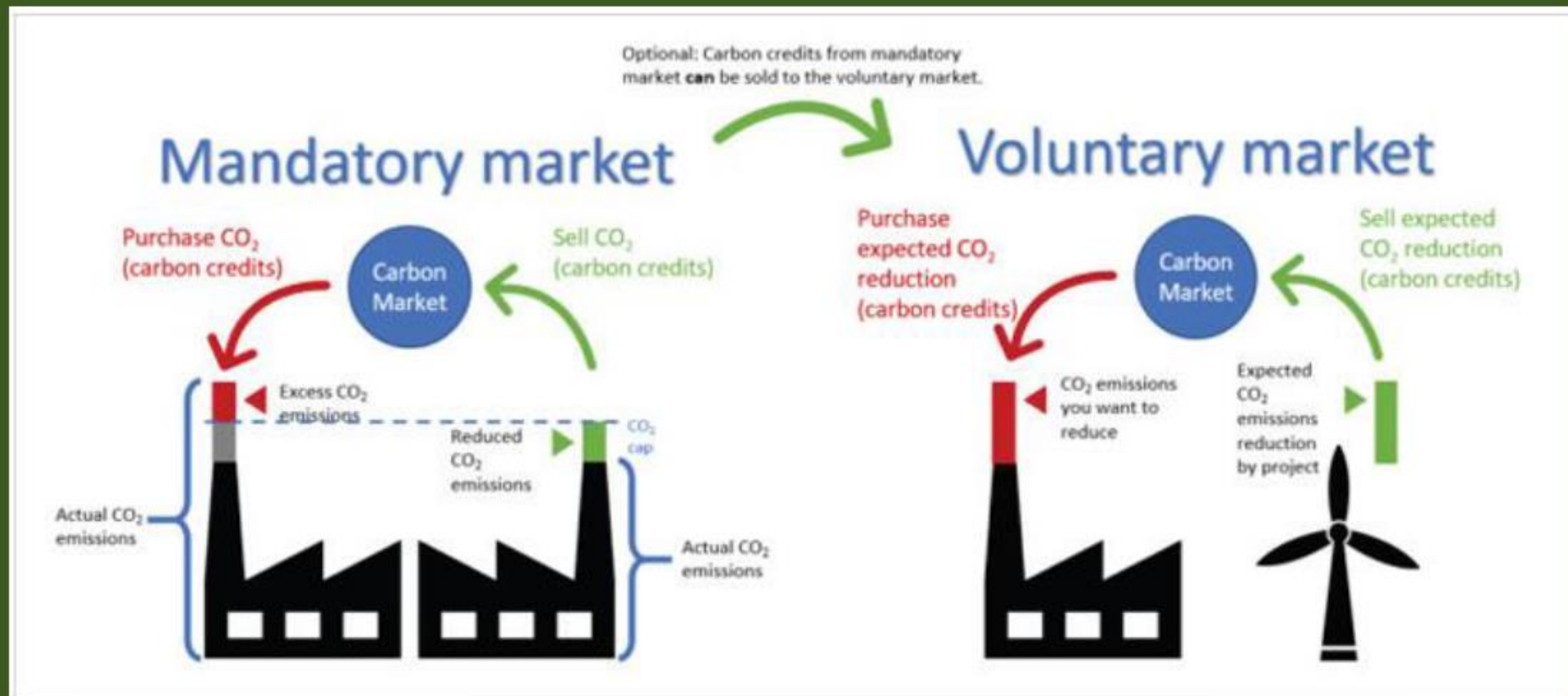


Crops and cattle in collaboration and co-opetition



Agriculture produces just 1% of Carbon Credits

Mandatory vs Voluntary Markets for Ag Based Carbon Credits



Source: De Jong, Elkerbout and Geleijnse (2020).

The Carbon Asset Solutions Measurement/Recording/Verification platform



M - measurement

Mobile Inelastic Neutron Scattering (MINS) Unit

PRECISION



R - recording

Microsoft Azure Ledger - Blockchain

INTEGRITY



V - verification

ISO 14064-2 2019 & 14064-3 2019 standards

EFFICIENCY

“The CAS MRV platform delivers a fully integrated digital standard that replaces current fragmented, inefficient and costly methods.”



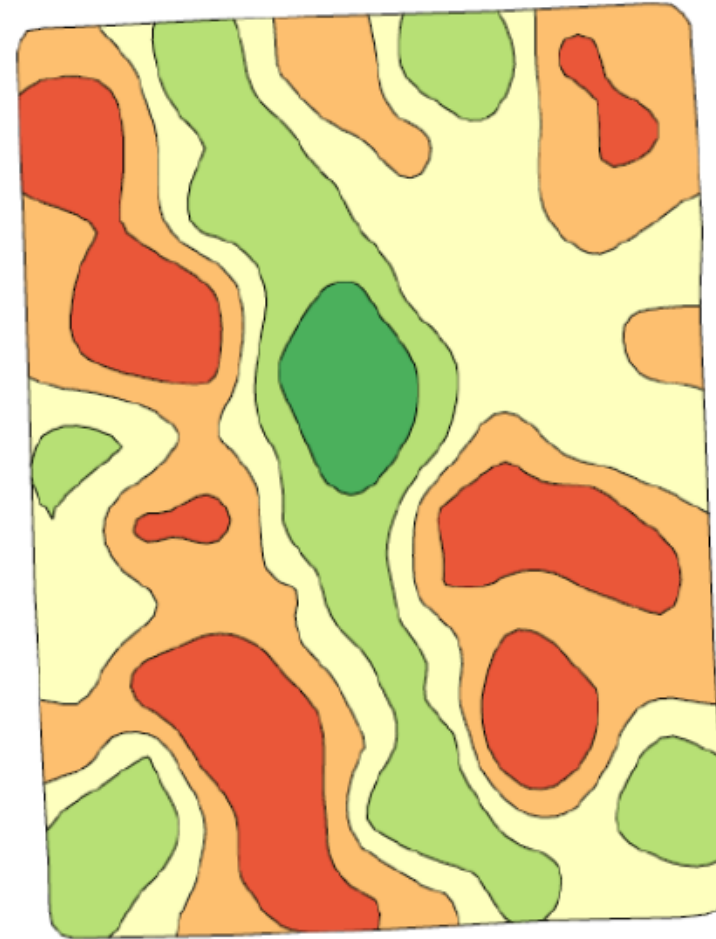


A carbon scan map



A carbon yield map

- Affirms what you have already done
- Informs how you should create & adjust your regenerative ag system/prescription going forward
- Addresses the 2 most important drivers...increasing your profitability and improving your functional soil health



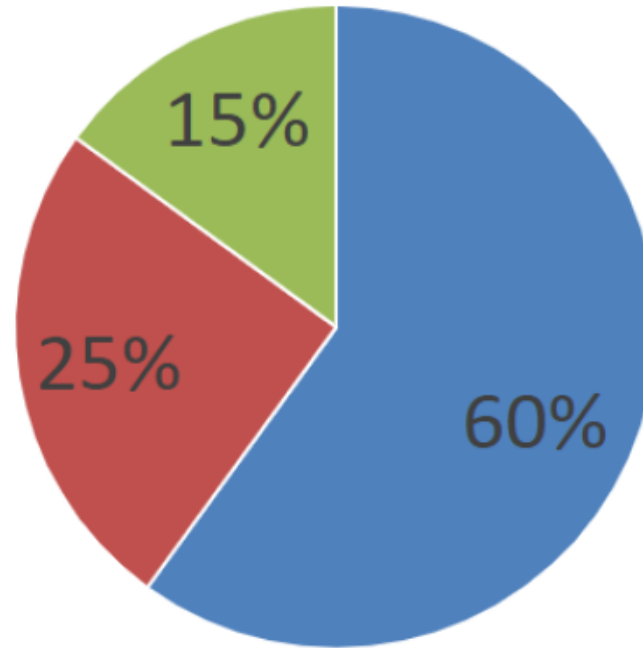
Farmer: Olds College Smart Farm
Field: 15-16
Area: 106.57
Average Carbon Weight: 4.73 %

Carbon Weight (%)

3.39 - 4.16	[19.16 ac]
4.16 - 4.52	[30.52 ac]
4.52 - 4.86	[32.41 ac]
4.86 - 5.36	[21.0 ac]
5.36 - 6.13	[3.49 ac]

And oh, by the way...

Forward Contract Sale



■ Farmer ■ Contingency Funds ■ CAS

The contracted area in ACRES

1,168

The planned annual sequestration rate as a percentage

0.080%

The expected unit carbon credit price in local currency units

\$40

enter data here

Fixed parameters	
Soil Density	1.35
Soil Depth in cms	30

From the data input above this is the amount of actual tonnes of Carbon captured in the soil in 1 year (after GHG net emissions and 5% buffer)	0.905	tC/ac
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The quantity of equivalent net tonnes of carbon dioxide removed from the atmosphere (tCO ₂ e) over 2 years if contract conditions are met. (after GHG net emissions and 5% buffer)	tCO ₂ e	Acres
	3,877	1,168

Projected forward payments to be made in local currency units

First forward contract payment on Day 1 of Year 1 production (30% year 1)	\$27,912
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Second forward contract payment on Day 366 of Year 1 production (30% year 1)	\$27,912
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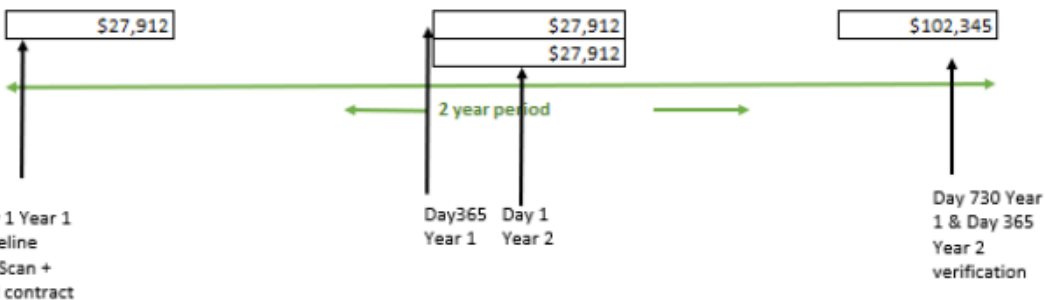
First forward contract payment on Day 1 of Year 2 production (30% Year 2)	\$27,912
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paid in same time period

Final balancing contact payment on verified production Day 730 of Year 1+ Day 365 of Year2 production (40% Year 1 + 70% Year 2)	\$102,345
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Total payments for 2 years production	\$186,081
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Average payment per acre per year over 2 years	\$80
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- Average AB farm 1168 acres
- Planned sequestration rate 0.08%/acre/year
- Expected global voluntary market carbon price
- \$40/tonne CO₂e
- 4 payments over 2-year term...3 @ \$27,912 and 1 @ \$102,345
- Total payout of \$186,081 or \$80/acre



BECOME A CARBON FARMER AND GET PAID



stewardship of the land



nourish the soil