



Tell Me the Beef Carbon Story Again, Please...

Karen Haugen-Kozyra, M.Sc., P.Ag.

CFGa Conference, November 13, 2019

Once Upon a Time....

livestock's long shadow
environmental issues and options



Livestock Emissions
worldwide were greater
than Transport Emissions

FAO 2006



Clearing the Air – Dr. Frank Mitloehner

Part of complete coverage on
Environment

going  green

Scientist: Don't blame cows for climate change

By **Paul Armstrong**, CNN
March 24, 2010 12:31 p.m. EDT

Mixx

 Recommend

 Be re



Mitloehner says confusion over meat and milk's role in climate change stems from a small section printed in the executive summary of a 2006 United Nations report, "Livestock's Long Shadow." It read: "The livestock sector is a major player, responsible for 18 percent of greenhouse gas emissions measured in CO₂e (carbon dioxide equivalents). This is a higher share than transport."



Page last updated at 00:15 GMT, Wednesday, 24 March 2010

UN body to look at meat and climate link

By Richard Black

Environment correspondent, BBC News



Livestock's Long Shadow calculated meat-related emissions from field to abattoir

UN specialists are to look again at the contribution of meat production to climate change, after claims that an earlier report exaggerated the link.

As a result, 4 Years Later...

"I must say honestly that he has a point - we factored in everything for meat emissions, and we didn't do the same thing with transport, we just used the figure from the IPCC."

BUT...Social Action Movement – Genie out of the Bottle



Paul McCartney backs 'Meat Free Monday' to cut carbon emissions

Former Beatle, Chris Martin and Sheryl Crow launch campaign to reduce meat consumption to tackle climate change

Food blog: Jay Rayner: do high profile food campaigns draw you in or turn you off?

Adam Vaughan

guardian.co.uk, Monday 15 June 2009 11.33 BST

[Article history](#)

很多年前的一天，我在钓鱼。
当我钓起可怜的小鱼，我突然意识到，
仅仅为了享受一瞬间的快感，
我正在杀死他，登时心头为之一震。
那一刻，当我看着他拼命地呼吸时，
我发觉他的生命对他来说，
就像我的生命对我一样的重要。



EATING AT

...days in its school
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...City schools,
...uniforms are top-
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Eleven Years Later....



COWSPIRACY

THE SUSTAINABILITY SECRET

Most Recent National Sustainability Strategy Estimate (2015)

Beef cattle production in Canada

represents only

2.4%

of total Canadian greenhouse gas emissions.^{1,2}



Beef cattle production

helps preserve approximately
1.5 BILLION
tonnes of carbon in Canada.

The estimated value of this storage is \$82.5 billion.¹



¹Canadian Roundtable for Sustainable Beef (CRSB). (2016). National Sustainability Assessment – Environmental and Social Assessment. Canada. (2019). Greenhouse gas sources and sinks: executive summary.

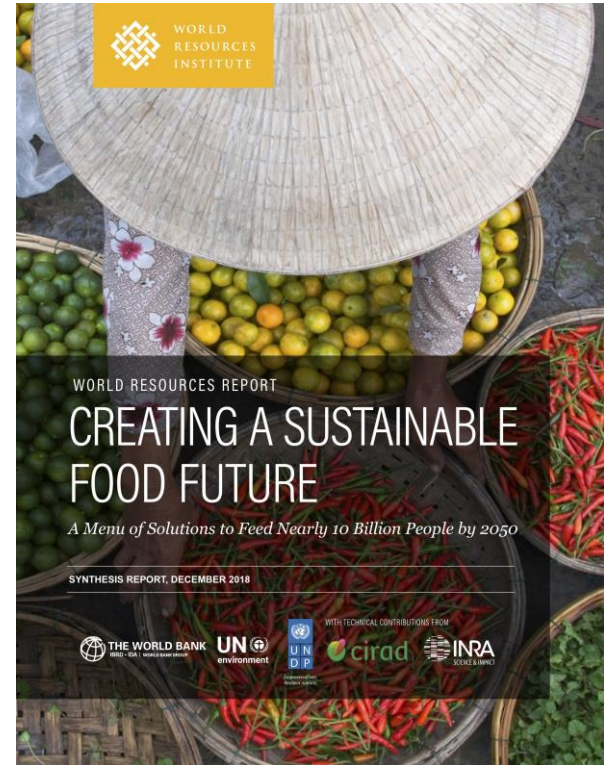
²If regulatory frameworks in Canada were to put a price on carbon. Estimate based on conversion of carbon to CO₂ eq. at \$15/ tonne (low range from AB, BC).

Find the facts at
www.crsb.ca

And Now, 13 years Later...World Resource Institute Webinar May 17th 2019 - the “Facts” About Beef and Climate Change

WORLD RESOURCES REPORT **Creating a Sustainable Food Future**

www.wri.org/sustfoodfuture



<http://bit.ly/BeefAndClimateChange>

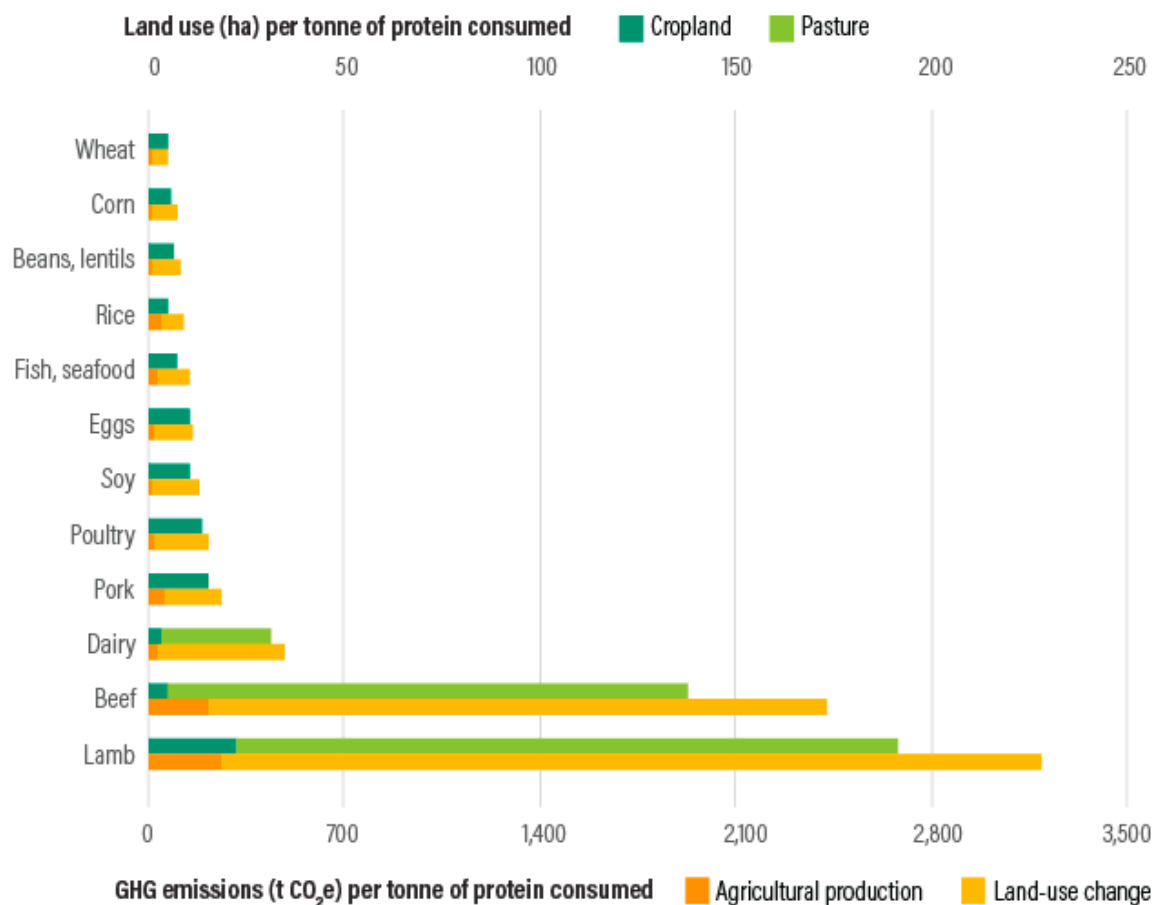
Why the Controversy?

Beef is more resource-intensive than most other foods

In Viresco's assessment of Beef Carbon Footprinting Methods for Global Roundtable on Sustainable Beef, June 2019 –

Science Gaps are:

- **LUC and Indirect LUC** - No well-established way of estimating
- **Biogenic Methane** – 10 years in the atmosphere
- **Soil Carbon** – no consistent methodology
- Yet – 343 B tonnes carbon are stored in the lands that support beef (FAO 2017)

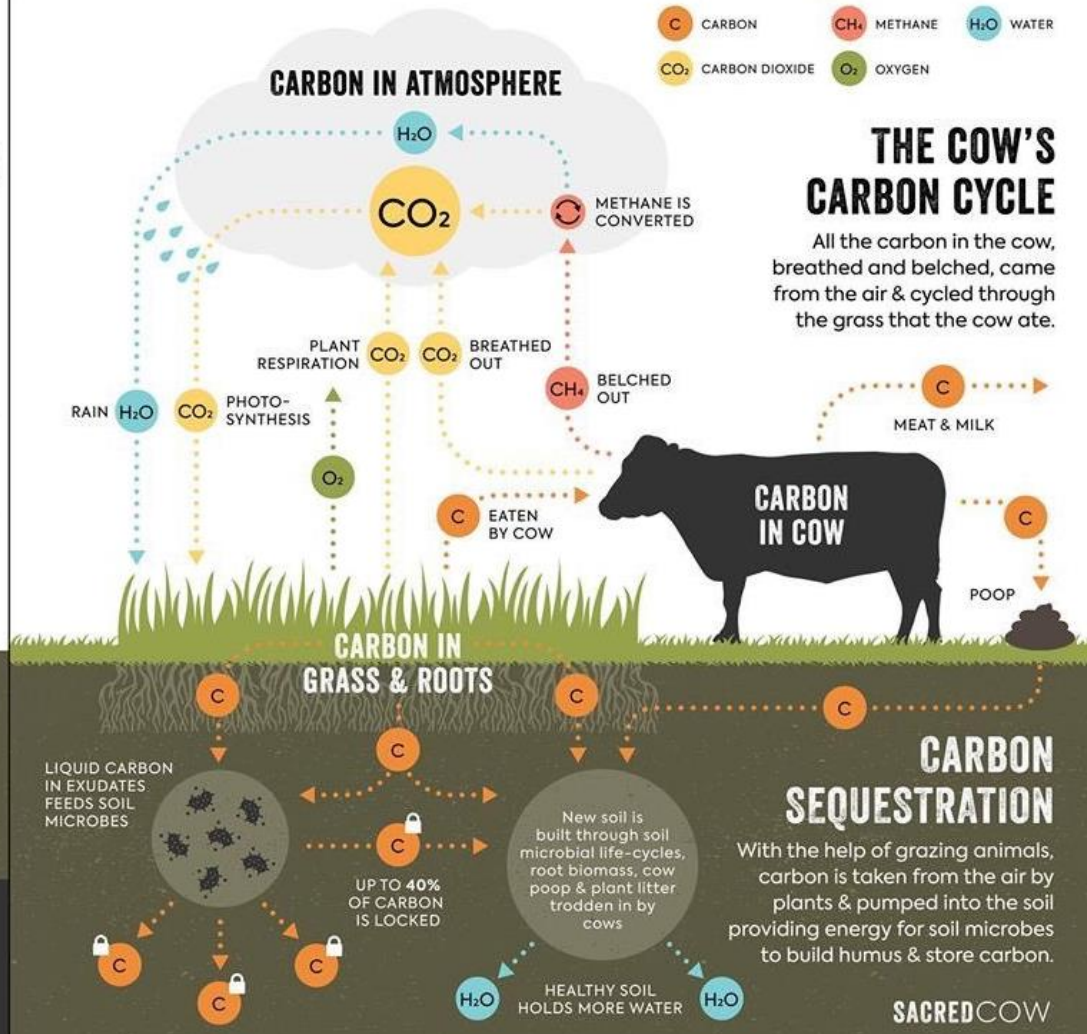


CATTLE CARBON CYCLING VS. FOSSIL FUELS

@SUSTAINABLEDISH | SACREDCOW.INFO

FOSSIL FUELS

Ancient carbon is directly added to the atmosphere as CO₂.



"We may be overestimating the impact of Methane"

-Frank Mitloehner, UC Davis

@GHGuru)



Cows vs Cars – Dr. Mitloehner, UC Davis



<https://www.youtube.com/watch?v=RW8BclS27aI>



We may be Overestimating the Impact of Methane

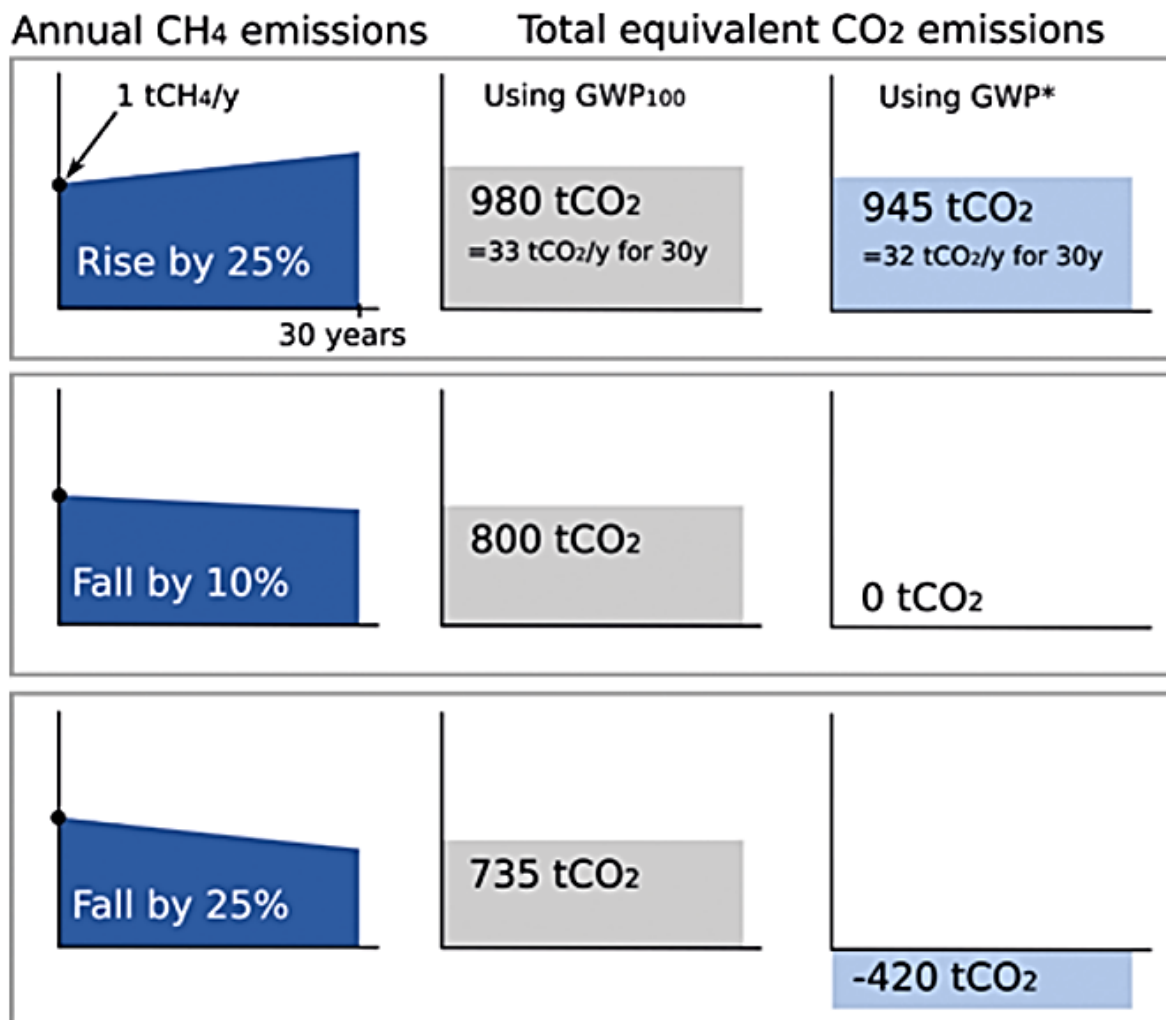
- Intergovernmental Panel on Climate Change – landed on the 100 year GWP metric
- Alternate Global Warming Potential metrics have been proposed based on viewing methane as a Flow – versus a Stock, like CO₂
- If Cattle populations remain stable – net zero impact since methane is short lived and acts like a flow
- If they decline, can actually cool the planet
- New Zealand is the first country to adopt the GWP* and account for methane differently in their inventory

#Watch this Space...

#Change the Narrative...

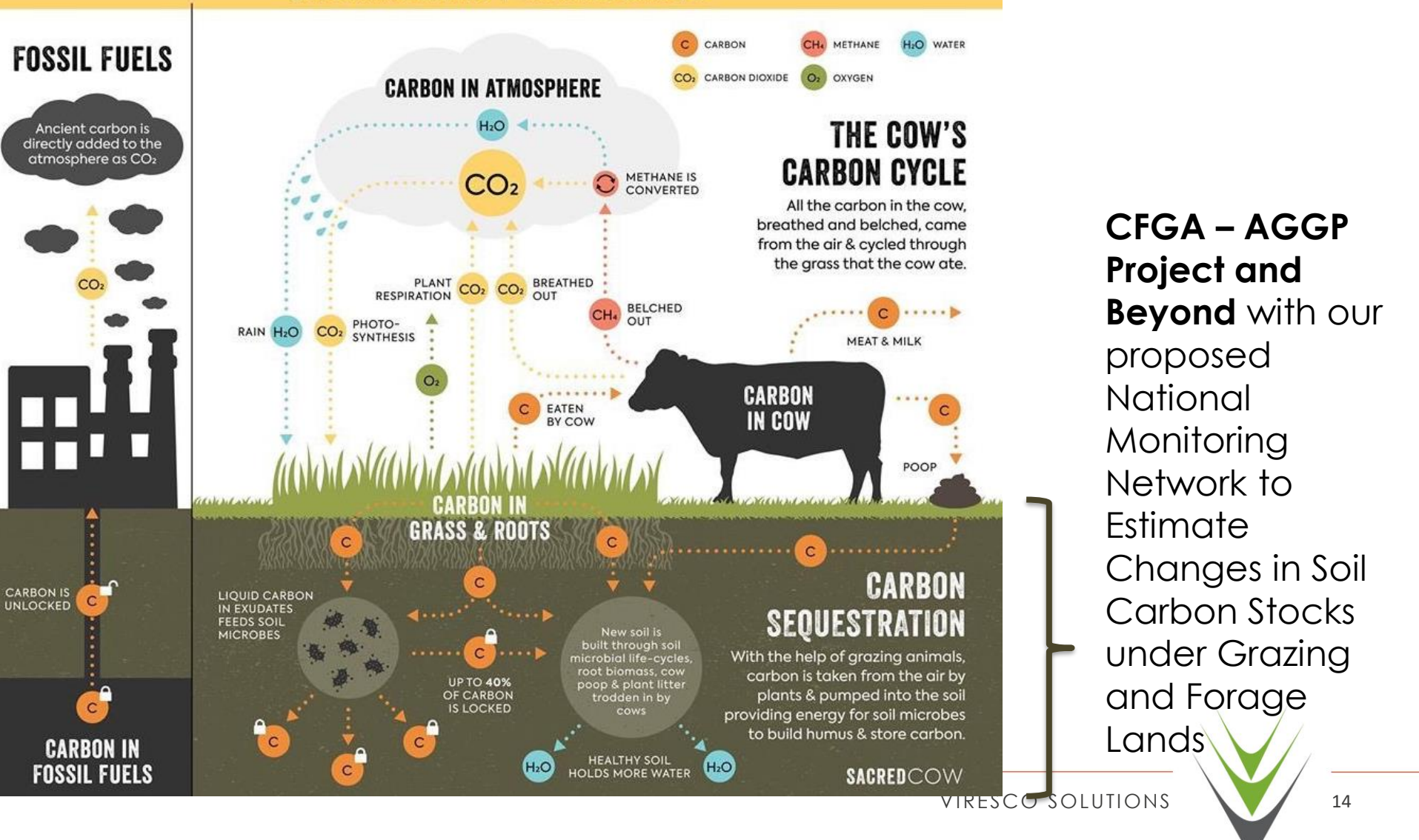


GWP* sensitive to overall GHG scenario



CATTLE CARBON CYCLING VS. FOSSIL FUELS

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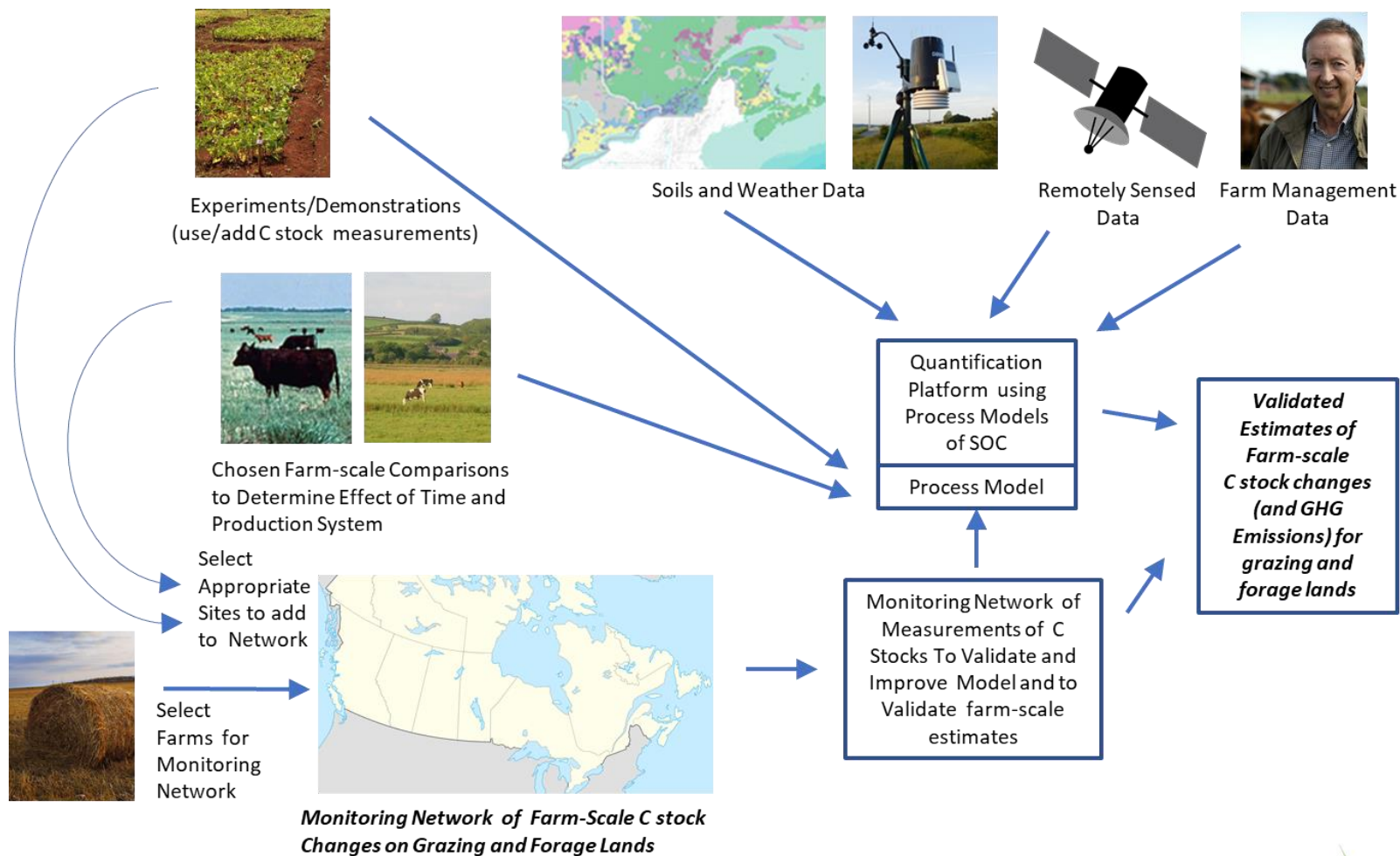
CFGA – AGGP Project and Beyond with our proposed National Monitoring Network to Estimate Changes in Soil Carbon Stocks under Grazing and Forage Lands

Building a Monitoring Network – Dr. Brian McConkey, Viresco

- Build network piecemeal to cover geographical and management range of interest to stakeholders



What is the monitoring network



The Next Challenge

- Pressing need to fill gaps in knowledge on the C stock change of grazing and forage lands in Canada.
- A well designed monitoring system enables producers to capitalize of market opportunities from C stock increases.
- A process model-based estimate of SOC that is well validated by independent measurements of C change is most cost effective.
- On farm SOC change monitoring sites are necessary for an effective monitoring network
 - Do well or go home



Solutions to Climate Change

FAO 2017 – COP 23 decision

↑ Productivity, ↓ Intensities

- Genetics, Better feed, Better husbandry, Legumes in Stands

Upcycling/Circular Economy

- Crop residues, agri-industrial by products and food wastes
- Manures and animal traction

Increased C Storage

- Improve degraded lands
- Silvopasture, Integrated systems

AGGP Improved Forage Management BMP Manual

AGGP Sponsored Climate Action Reserve Grasslands Protocol

CAP Agri-Assurance Pilot Project on CAR Protocol

National Monitoring Network Proposal

It's all about Balanced Action

