RESOLUTION 2-24

COMPENSATING PRODUCERS FOR ECOSYSTEM SERVICES

WHEREAS: society is now placing more emphasis on the role of producers as stewards of the environment for their benefit**;** and

WHEREAS: the Federal Government has established a price metric for carbon and is considering reductions in nitrogen use that will impact producers without developing the appropriate offset or compensation system to producers performing these services; and

WHEREAS: Governments and the Public are demanding or restricting more ecological activities such as wetland use, species preservation, wildlife management, predator control, reduced impact/emissions, carbon sequestration, changes in management practices and others; and

WHEREAS: it is becoming increasingly costly for producers to shoulder the burden of every public interest at their expense without being compensated or offset fairly for the beneficial ecosystem services performed;

THEREFORE BE IT RESOLVED
THAT ALBERTA'S AGRICULTURAL SERVICE BOARDS REQUEST
That the Federal and Provincial governments develop and implement immediately a "good actor" compensation mechanism for producers performing ecosystem services beneficial for society.

FURTHER THEREFORE BE IT RESOLVED
THAT ALBERTA'S AGRICULTURAL SERVICE BOARDS REQUEST
That the Federal and Provincial governments investigate creating an exchange to trade Carbon and other ecological services for compensation at the minimum rate already determined by the Federal Government.

SPONSORED BY: County of Northern Lights
MOVED BY: _____
SECONDED BY:_____
CARRIED: _____
DEFEATED: _____
STATUS: **Provincial/Federal**
DEPARTMENT: Alberta Agriculture and Irrigation,
Agriculture and Agri-Food Canada

BACKGROUND INFORMATION
Summary Points:

- The Government of Canada has already determined a Carbon Pollution Pricing System using arbitrary

numbers and metrics. They are starting to talk about Nitrogen and numerous other ecosystem issues. Possibly more to come in the future, we need a proactive system.

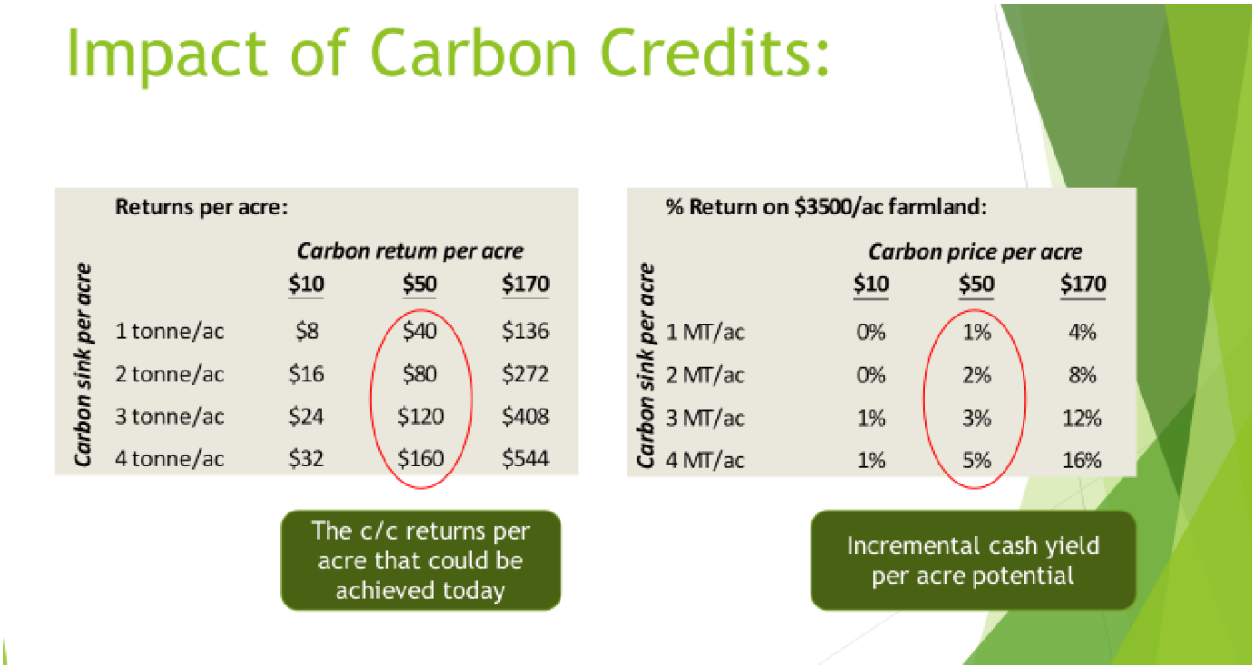
- Go figure the Government of Canada created a system to tax or levy its citizens and producers, but they never created the system for people who are sequestering, storing, or converting carbon to other use to be compensated fairly for their services. If the Carbon Tax is to stay the second part of the system needs to be developed. An offsetting or compensation mechanism needs to be established. Either Alberta needs to take full control of the Carbon Tax system and implement its own compensation or offset program, or they need to work with the Federal Government. We need to also be forward looking to Nitrogen and other ecosystem services.
- The Program should be simple and use the same arbitrary metrics the government used to develop its pricing matrix. The government should create standards and accepted benchmarks for producers to use to claim back compensation or offsets for their management efforts.
- Carbon started at $50 per ton and will increase $15 per ton to $170 in 2030.
- Land managed appropriately has tremendous potential to sequester, store and cycle Carbon.
- Land managed appropriately can potentially sequester 1-4 t per acre of Carbon and maybe more in some circumstances.
- By 2030, if the Government is charging $170 a ton for carbon emissions, why shouldn't someone sequestering, storing, or cycling Carbon be paid $170 a ton? Start doing the math on per acre payments of land to store Carbon.
- We are paying carbon tax everyday directly and indirectly hidden in the price of goods and services and to boot that carbon tax is added in pre- GST. It is about time we got some of it back.
- This is another very complex issue and we are asking for support to at least get the issue moving forward so producers can be compensated for sequestering, storing and cycling carbon.

Idea 3: Measuring the value of food security and environmental preservation

1. Is Agriculture getting prioritized properly?
2. How do we measure its worth? What is food security and maintaining natural landscapes under agriculture worth to the province? A marketplace!
   -that respects private property rights
   -that encourages more urban intensity over urban sprawl
3. What incentives are there for farmlands to be kept intact?
4. How are we compensating for just practices?

Each cow in Western Canada ensures an average 10 acres or more of grasslands remain intact…the habitat of over 80 animal and 300 bird species! The cow is key unit to conservation policies!!

Ranchers are maintaining water quality, wildlife and preserving land in its native state at their expense! The province and its people are beneficiaries. Is this "Sustainable"? Is it fair?



New Report Warns of Potential for $48 Billion Loss in Farm Income if Fertilizer Reductions are Required of Growers FOR IMMEDIATE RELEASE September 27, 2021 OTTAWA, ON., – Cutting fertilizer use to reduce on-farm emissions could cost growers nearly $48 billion over the next eight years, says a newly released report by Meyers Norris Penny (MNP). Under Canada's A Healthy Environment and a Healthy Economy, the Government of Canada is envisioning a 30% absolute emissions reduction target for on-farm fertilizer use by the year 2030. Elsewhere, the European Union (EU) has proposed an absolute emissions reduction target and aims to achieve it through a 20% reduction of fertilizer use compared to 2020 levels. If Canada adopted the EU model, the potential economic impact of reduced fertilizer use would be devastating to Canadian farmers. To avoid this, any plan to reduce greenhouse gas emissions must be done through sustainable agricultural intensification; an approach that allows for significant reductions in agricultural emissions without risking Canada's contribution to global supply of food or economic growth within the sector. Fertilizer Canada commissioned the report by MNP, one of the largest full-service chartered professional accountancy and business advisory firms in Canada. MNP has specialized expertise regarding all aspects of agricultural business – from primary producers through to food and beverage processors. "When the Federal government announced a 30% emission reduction target for on-farm fertilizer use it did so without consulting - the provinces, the agricultural sector, or any key stakeholders - on the feasibility of such a target," said Karen Proud, President and CEO of Fertilizer Canada. "This study shows that we need to work together to find practical and pragmatic solutions for emissions reductions, without causing economic devastation to our agricultural sector." Canada's fertilizer industry has a significant role to play in mitigating climate change – that is why industry has been proactively working to reduce on-farm emissions for over a decade by implementing 4R Nutrient Stewardship. 4R Nutrient Stewardship is a science-based approach to nutrient management that involves applying the Right Source (of fertilizer) at the Right Rate, Right Time and Right Place. By utilizing 4R best management practices, farmers can optimize plant nutrient uptake, and increase yields, while achieving verifiable reductions in emissions. 4R Nutrient Stewardship is part of an overall farm management plan that can be complimented with other agronomic and conservation practices, such as no-till farming and the use of cover crops, that also play a valuable role in supporting on-farm emissions reductions. "No one is more impacted by climate change than farmers," said Proud. "The 4R approach has been developed over the last decade and a half in partnership with leading scientists, farm organizations and provincial governments to reduce agriculture's environmental impact without compromising farmers' competitiveness." On-farm environmental goals must reflect the Canadian landscape. Fertilizer Canada

is calling upon the Federal government to recognize 4R Nutrient Stewardship as the standard in nutrient management and a key component to achieving on-farm emissions reductions from fertilizer. Now is the time for the government to collaborate with industry and farmers on an approach that showcases Canada as a world leader in reducing on-farm emissions. Last week's federal election provides an opportunity for the government to refine its approach to agricultural emissions. One of the first priorities of the Agriculture and Agri-Food Minister must be to work with stakeholders to develop an approach to meet environmental targets that is science-based, reflects the realities of Canadian agriculture and recognizes 4R Nutrient Stewardship as an important driver of emissions reductions. "We do not have to choose between the environment and the economy," said Proud. "By choosing 4R Nutrient Stewardship, as the foundation to a holistic approach to on-farm emissions reductions, the agricultural sector and the government can work together to meet our environmental goals, while at the same time supporting our farmers." -30- Fertilizer Canada represents manufacturers, wholesale and retail distributors of nitrogen, phosphate, potash and sulphur fertilizers. The fertilizer industry plays an essential role in Canada's economy, contributing $23 billion annually and over 76,000 jobs. As the unified voice of the Canadian fertilizer industry, Fertilizer Canada works to promote the safe, responsible, and sustainable distribution and use of fertilizer. Please visit www.fertilizercanada.ca

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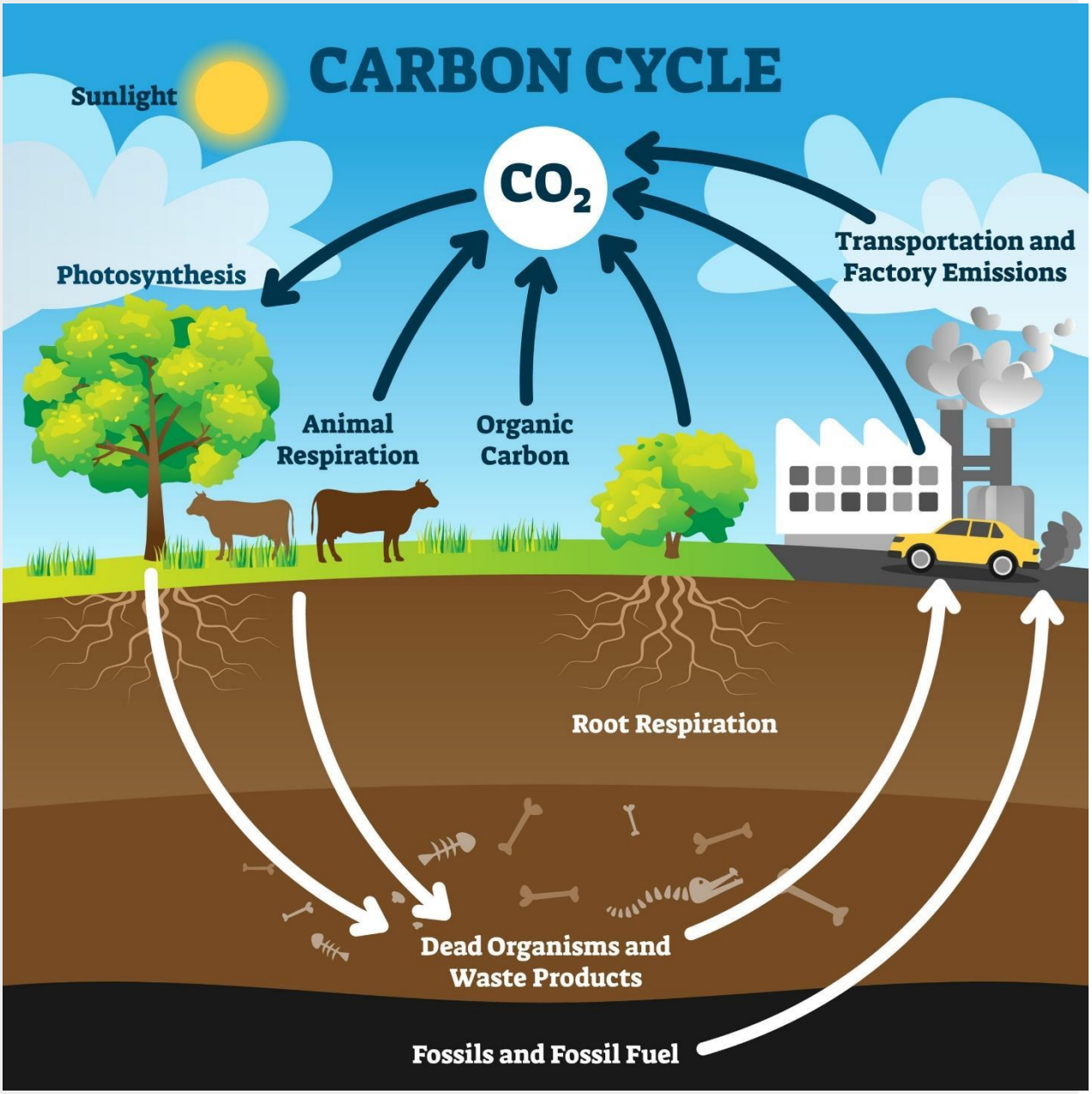
Eligibility for Sequestration Payments— New Adopters Versus All Adopters (Including "Good Actors")

In terms of eligibility requirements, two payment options relating to the additionality of carbon sequestration dominate both policy discussions and published studies. The first option pays all farmers who practice the activities covered by the incentives regardless of how long they have been practicing the activities. Hence, if a payment were offered to encourage farmers to expand the use of—say, conservation tillage—all farmers managing with conservation tillage would be eligible for the payment. This option is referred to as the "good actor" approach because it is perceived as not penalizing farmers who undertook the desired activity before the compensation policy was available. The alternative "new adopters" option limits sequestration payments to farmers not engaged in the desired land uses and production practices at the time of the program baseline. As a result, payments only cover additional carbon sequestration relative to the preprogram baseline. Supporters of the good-actor payment criterion argue that it avoids "moral hazard," in which farmers already engaged in desired practices revert to undesirable land uses and production practices to qualify for incentives. This rationale requires the assumption that it is not possible to avoid this situation by observing and penalizing such behavior.15 Those in favor of the new-adopter criterion argue that it does not pay farmers for having made changes in land uses or production practices that they previously concluded were economically rational; instead, it limits payments to farmers who require an additional incentive to economically rationalize the adoption of the desired uses and practices. From an incentive design perspective, the newadopters criterion will generally be less costly— perhaps significantly so—than the good-actor criterion, particularly if the moral hazard issue can be resolved. For example, the United States has approximately 450 million acres of privately owned cropland and 352 million acres of privately owned grassland (i.e., pasture or range) (Vesterby and Krupa, 2001). In a program providing incentives to shift economically marginal cropland to permanent grasses under the new-adopter criterion, owners of any of the 450 million acres of cropland that shift into grasses would be eligible for the incentive payments. Under the good-actor criterion, not only would owners of these acres be eligible to receive payments but so, too, would owners of at least some of the 352 million acres of privately owned pasture and range that remained in those uses. The same issue could arise with providing farmers incentives to afforest cropland and pasture, or incentives to shift from conventional to conservation tillage. At present, about 420 million acres of privately owned forest land and over 100 million acres of cropland in the United States are managed with some form of conservation tillage (Vesterby and Krupa, 2001; USDA, ERS, 1998).

WHY GRASSLAND CAPITAL X MEASURES ENVIRONMENTAL SERVICES INSTEAD OF SOIL CARBON

Dec. 14



Grassland Capital X is a proposed conservation exchange that buys and sells ecosystem service benefits. Services such as biodiversity, water quality, and soil health are measured, quantified, verified, and then offered to buyers through a free market exchange. The exchange helps form an “environmental partnership” between landowners producing the services and buyers wishing to help the environment through the purchase of the services.

Soil Health indicators such as soil aggregate stability, bacteria to fungi ratios, soil organic matter and soil microbial respiration are measured as proxies for ecosystem services such as climate regulation, carbon storage and carbon sequestration.

To answer the question "why didn't we just measure soil carbon?", let's look at the carbon cycle and the path of a carbon molecule.

It all starts with photosynthesis - the process by which plants use sunlight, water, and carbon dioxide to create oxygen and energy in the form of sugar to be stored as glucose. In simple terms, the carbon molecule in carbon dioxide now transforms to become part of long chain sugars, which in turn are broken down through cellular respiration to provide energy that plant cells use to live and grow.

The carbon molecule that started as carbon dioxide is now part of the above ground plant canopy and below ground roots. But it doesn't end there, plant root exudates (organic and amino acids) are then used to influence the rhizosphere around the roots to inhibit harmful microbes and promote the growth of a complex variety of species and microorganism existing in the soil.

This carbon molecule can then be found in soil microbes such as bacteria, fungi, and methanotrophs that use methane as an energy source, as well as the grazing animal tissue. Methane not used by methanotrophs returns to the atmosphere where it breaks down into water and carbon dioxide, starting the whole process over again.

When a plant is stressed through grazing it does two things. 1) sacrifices root resources to regrow a new canopy, leaving carbon behind deep in the soil, and 2) makes the plant roots send out long chain carbon as sugars to attract and feed fungi. The fungi then exchange nutrients the plant roots are unable to extract from the soil in exchange for carbon sugars.

Many soil carbon experts are challenged with where and how to measure carbon. Do you measure carbon in the root soil, or do you measure the plant and root material as well? Also, which chains of carbon do you measure and where in the soil or plant material do you find the carbon chains?

When taking your soil samples, the depth of your sample is important to consider. Some will measure carbon at the surface (top 15 cm). This top 15 cm has a significant but shallow surface of active and decaying plant material and microbes that are all part of the carbon cycle. If this is your preferred method, then the time of day also becomes an important part of your measurement protocol as soil microbes respire in the morning leaving a cloud of carbon dioxide at ground level which can reach three to four times higher levels than regular atmospheric carbon dioxide. Plant leaves can soak up most of the respired CO_2.

You can also measure beyond 15cm at a soil depth where deep grass plant roots have left a pool of secure carbon. Measurements beyond 30 cm can be difficult to obtain depending on soil type and land use which significantly increases soil sampling costs.

Soil scientists, buyers, sellers, and other stakeholders agree that a standardized way to measure carbon is needed for markets to function with credibility and transparency. However, scientists that have spent decades determining methods to measure soil carbon are still not always in agreement on best methods and soil sampling protocols. Many soil carbon measurement protocols do not lend themselves to measuring a complex grassland ecosystem which provides higher soil carbon storage. The question remains- where in the carbon cycle do you measure, at what depth of soil, and at what time of day. A healthy carbon cycle is dynamic and complex.

Instead of weighing in on the best way to measure soil carbon, Grasslands Capital X advisors have recommended measuring the ecosystem services generated from grasslands and the carbon cycle. By measuring soil health, in combination with other co-benefits of a grassland system, marketplace buyers can secure the benefits of a functioning ecosystems built on a functioning carbon cycle.

In the end, grassland managers will manage what is measured, and what we are measuring helps achieve a wholistic healthy grassland ecosystem. This wholistic approach will be a win- win- win for society, buyers, and ranchers.

Written By: Norm Ward, Governor of Western Stock Growers Association

- https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work/putting-price-on-carbon-pollution.html#toc0
- https://aaaf.ab.ca/documents/ist-asb-presentations/2023-asb-conference-presentations/presentations/2023/251-ryan-copithorne-asb-2023/file.html

- https://agriculture.canada.ca/en/department/transparency/public-opinion-research-consultations/share-ideas-fertilizer-emissions-reduction-target/discussion
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