

# **SHOULD I SELL CARBON CREDITS?**

## ***A Decision Guide for Ranchers\****

*Prepared by the King Ranch® Institute for Ranch Management*

Increasing public attention to climate issues has amplified pressure on many industries to develop 'climate neutral' systems. A central goal of most 'climate neutral' strategies is for an entity to achieve 'net zero' carbon emissions by reducing direct emissions of greenhouse gases (GHG) where possible and seeking sources of carbon dioxide (CO<sub>2</sub>) emissions offsets (often called 'carbon credits') to balance emissions that cannot be eliminated. These 'offsets' or 'credits' represent CO<sub>2</sub> being removed from the atmosphere and stored. Land-based carbon accumulation has long been considered an essential element of climate mitigation strategies, and is increasingly viewed as a potential source of purchasable credits for those seeking to offset emissions. This article describes the foundational concepts of carbon trading, risks associated with entering a carbon credit contract, and market considerations. Our goal is to inform ranchers so the best decisions can be made in an emerging and uncertain enterprise.

## **CARBON CREDITS AND CARBON CREDIT TRADING**

### **What is a 'Carbon Credit'?**

A carbon credit represents one metric ton (1,000 kg) of CO<sub>2</sub> or CO<sub>2</sub> equivalents removed from the atmosphere. From an accounting perspective, if the atmosphere is the 'account', then a release of CO<sub>2</sub> into the atmosphere is a 'debit' to that account, and removal of CO<sub>2</sub> from the atmosphere is a 'credit'. A company may seek to reduce its emissions, but may not be able to completely eliminate emissions. If they wish to achieve 'net zero' emissions, then they will seek 'credits' to their atmospheric account that offset any remaining 'debit' amounts to balance the account. Sources of carbon credits include those associated with natural processes that begin with photosynthesis of plants. These are the focal point of this decision guide.

### **Creating a Carbon Credit**

Plants effectively capture CO<sub>2</sub> from the atmosphere, and combine it with water through photosynthesis to assemble it into carbohydrates. Some carbohydrates are translocated to the root of the plant, and may be excreted or assimilated into the soil as organic matter that contains 'soil carbon'. This process transfers atmospheric carbon into soil carbon and is the basis of land-based carbon credit generation (Figure 1). Generating a tradeable carbon credit requires measuring, verifying, certifying, recording, and tracking the amount of carbon accumulated and retained in the soil. Much like an exchange traded contract for a commodity, several entities have created 'Standards' for the generation of carbon credits.

### **Contract Standards**

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Standards define the credit units (e.g., 1 tonne of CO<sub>2</sub>) and the methods for measuring and validating accumulation and storage of credited CO<sub>2</sub> equivalents. Standards may also describe required components and types of 'projects' intended to generate tradeable credits and other procedures governing accumulation and maintenance of soil carbon. Since there are multiple entities that facilitate the trade of carbon credits, more than one standard exists. While the various standards share many similarities, they may also have key differences. Standards may also differ in their approach to and definition of questions of 'additionality' and 'permanence' of storage. These two items often form critical distinctions in how credits are accepted and valued, and understanding these differences is essential.

### **Carbon Market Facilitators**

Overall, entry into a carbon credit contract is similar to a commodity production contract with committed future delivery. As such, the carbon market has several participants. The ranch is subject to production (accumulation) risk, price risk and various transaction risks that may be contained in, or mitigated by, the specific contract governing the transaction.

## **PRODUCTION RISK**

### **Capacity to Accumulate Soil Carbon**

The fundamental consideration for a rancher contemplating a carbon credit enterprise is the physical capacity of the ranch to accumulate soil carbon. Strategies associated with 'good' grazingland management, that increase forage growth and reduce bare ground, are generally expected to promote soil carbon accumulation. The uncertainty of soil carbon accumulation rates, and factors like drought that are beyond the control of managers, can impact these rates and create 'production risk'. Managers should consider this uncertainty in the development of the soil carbon accumulation enterprise.

It is difficult to gain precise measurement of soil carbon across large landscapes, and measurements can vary considerably across a single property or management unit. The change in soil carbon measurement (% carbon in a soil sample) that represents 1 tonne of CO<sub>2</sub> per acre is very small, and reliable detection of small changes generally requires a large number of samples. This inherent variability creates considerable risk that small changes cannot be detected. Soil sampling is likely to be the greatest expense incurred in the development of a carbon credit project, and clarity about the magnitude of soil carbon increase that can be expected coupled with the number of samples required to detect that change are essential. Managers should seek reliable estimates of soil carbon accumulation potential and have clear understanding of sampling requirements before entering a carbon contract.

## TRANSACTIONAL RISK

As with any contract, the devil is in the details in carbon storage contracts. There are no 'standard' contracts; and terms in currently offered carbon contracts are unique and may be unfamiliar. It is important to seek counsel from an attorney with experience in negotiating these types of agreements. The items below provide a starting point for contract evaluation.

***Required & Prohibited Practices.*** Determine what activities will be *required* and what activities will be *prohibited* pursuant to the contract. Ranchers should ensure the contract clearly describes required practices.

***Payments.*** The payments being offered to landowners can essentially be put into two buckets: 'payments for practice' and 'payments for outcome'. A payment for practice contract is one where a set payment is guaranteed if a rancher undertakes the required practice. A payment for outcome contract offers a payment per metric ton of CO<sub>2</sub> equivalent either captured in the soil or no longer emitted from production activities.

***Term.*** Most currently offered contracts last 10 to 15 years.

***Potential penalties.*** In every contract there will likely be various penalties that could be triggered based upon actions by the rancher. Taking the time to understand exactly what actions a rancher must take — or not take — to avoid penalties is critical.

***Stacking prohibition.*** These provisions generally provide that a rancher cannot enroll the same land in multiple carbon contracts. Some stacking provisions may state that the rancher may not participate in any other carbon contract or *program*. Contracts may also disallow participation in *any* government programs and prohibit the receipt of any government payments.

***Data provision and ownership.*** All contracts will require landowners to provide extensive data about their land and operation. Many contracts allow the purchaser to enter the property for inspection and allow for aerial views by drones. Most contracts provide that all data generated and collected under these agreements is the property of the landowner.

***Measurement and verification.*** Measurement and verification are central to any carbon contract. Clear reference to a standard outlining these requirements is important. Contracts should specify which party will pay for the cost of any measurements.

***Taxes and insurance.*** A landowner should require the counterparty to the contract or the purchaser of carbon credits to be liable for any change in property valuation and/or increases in ad valorem taxes that result from the carbon enterprise. Ranchers should require the purchaser and any contractors entering the property to carry insurance and to list the manager as an additional insured.

***Amendments and assignments.*** There are some contracts with amendment provisions that essentially allow the developer to make any contractual modifications they choose. Ranchers should pay attention to provisions related to how contracts may be amended.

## **MARKET RISK AND VALUE OF CARBON CREDITS**

Entering into a carbon credit contract is an additional enterprise to the ranch portfolio. The gross revenue is the contracted price of a carbon credit times the number of credits secured. The gross unit price of a carbon credit in the United States is currently \$18 to \$22. Some fraction (often 20%) of generated credits are not eligible for sale, but are placed into a 'reserve pool' as a hedge against future potential accumulation reversals (i.e., drought). Additionally, fees are assessed by developers, verifiers, and registries, and sampling costs are incurred. These may represent an additional 20% or more of gross potential revenue. The net price for generated credits is therefore 60% to 80% of the gross price.

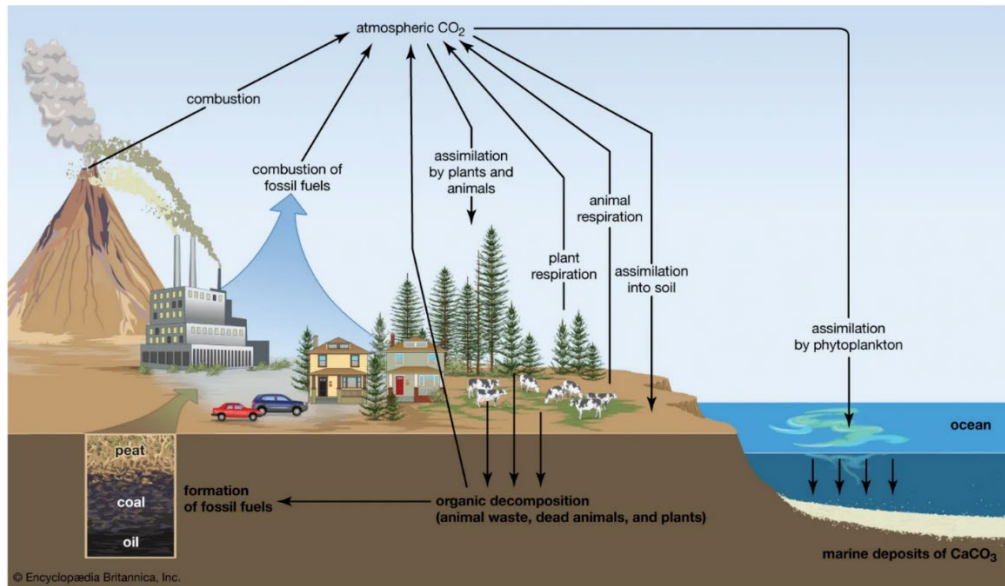
There are multiple companies in this market paying producers to store carbon. There are differences in the contract terms that may make a given strategy more or less valuable for a given ranch. These different opportunities should be explored to find the highest value proposition, which may not always be at the highest transaction price.

In conclusion, the emerging market for carbon credits may offer an important opportunity to ranchers. As with the addition of any enterprise to the ranch portfolio, the costs, benefits and risks should be explored to make an informed decision.

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To download the complete "Should I Sell Carbon Credits: A Decision Guide for Ranchers" white paper or view the recorded webinar visit: <https://krirm.tamuk.edu/carbon-credits/>

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**Figure 1.** Schematic of the global carbon cycle.