



Southern Gulf  
NRM

## *Managing Cattle for Productivity, Profitability and the Carbon Market*



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Southern Gulf NRM (SG NRM) is a natural resource management group that operates in north-west Queensland. Based in Mount Isa, SG NRM's catchment covers some 195,000km<sup>2</sup> and extends from Hughenden to Mornington Island, comprising the Flinders, Cloncurry, Leichhardt and Gregory-Nicolson Rivers, Settlement Creek and Morning Inlet, plus the Wellesly Islands group.

As a community-based not-for-profit, SG NRM is charged with protection and restoration of biodiversity values, arresting land degradation, enhancing adoption of sustainable land management practices, improving water quality through decreased sedimentation and facilitating improved coastal and marine management. SG NRM works with the community to deliver projects that improve and protect our region's natural resources, and to maintain and increase the prosperity of industries that rely on these. We work closely with pastoral, community, conservation, local government, mining, Traditional Owners, tourism and other industry sectors to identify priorities, projects and partnerships that deliver on-ground solutions.



## THE LAND RESTORATION FUND

The Land Restoration Fund (LRF) is an initiative by the Queensland Government to expand carbon farming in the state by supporting projects that deliver clear environmental, social and economic co-benefits. The LRF will contribute to the Queensland Government's commitment to reduce carbon emissions by at least 25% on 2005 levels by 2030 and reach zero net emissions by 2050.

With the Queensland Government investing \$500 million into the LRF, this presents a significant opportunity for Queensland to use its large land mass, the landscape's ability to sequester or abate carbon, and the skill and expertise of the land managers to supply premium carbon credits for national and global markets while supplementing their income, increasing the longevity and resilience of their land, and exercising efficient land and herd management practices.

SG NRM has been tasked by the LRF to build pastoral industry knowledge and confidence in the carbon farming and the pathways land managers can take to increase revenue through the carbon market.

The Project Team is working with beef cattle producers in the north-west region to explore carbon abatement opportunities. The workshops will explain methods that allow participation in carbon farming, as well as address and find solutions to barriers that prevent or limit participation. The workshops will provide the opportunity to participate in the decision-making process for the development of a Herd Efficiency Aggregation model to overcome these barriers.

The first round of workshops will explain the carbon market and how producers can become involved. They will provide real world examples of how other beef cattle producers such as Paraway have taken part in the carbon-farming market to increase profitability. Carbon industry professional and developer of carbon farming projects, Natural Carbon, have spent three years experimenting with methods directly related to graziers and will also share their findings at the workshops. This initial round of workshops is specifically designed to gather information from producers about what currently prevents their participation in carbon-

farming projects. The information gathered will inform the development of a Herd Efficiency Aggregation model aimed to overcome identified barriers of participation.

Another series of workshops will be organised in early 2020, where SG NRM will present the refined version of the established Herd Efficiency Aggregation model. The final aggregation feasibility report will detail the roles and responsibilities of all parties involved in an aggregation, as well as the likely ACCU yield and financial viability of the project for the producer and a Carbon project Service Provider like Natural Carbon.

Natural Carbon, a carbon industry professional, will also be on hand for those interested in developing a property feasibility report of their herd for participation in the aggregation. The property feasibility report includes a 1-4 page summary of the analysis of the last 3 years of herd management and productivity data including purchases, sale weights, weaning and mortality rates by animal class. The data are used to develop a baseline or footprint value is measured in t CO<sub>2</sub>-e (tonnes of carbon dioxide equivalent) which factors the conversion of methane (CH<sub>4</sub>) from enteric fermentation (burps) and nitrous oxide (N<sub>2</sub>O) from manure.

By attending the workshops, participants will:

- Have an improved understanding of the carbon market and carbon farming
- Have the opportunity to voice their opinions in designing a Herd Efficiency Aggregation model
- Have their concerns heard and addressed to assist in gaining participation
- Meet carbon farming professionals who have experimented and successfully established herd management abatement projects with other cattle producers.
- Have heard from a working example of an existing aggregation
- Understand requirements to participation
- Have the opportunity to move forward to feasibility studies with Natural Carbon







### CARBON FARMING AND THE CARBON MARKET

Carbon farming refers to land management activities that avoid greenhouse gas emissions (GHG), or increases the carbon stored in the land. Carbon farming can range from a single change in land management, such as grazing management, to a whole-of-farm integrated plan which maximises carbon capture and emissions reduction.

Some examples of carbon farming are:

- Converting cropland to permanent pasture
- Changing pasture species composition
- Changing grazing patterns
- Clay spreading and/or delving
- Reforestation using native trees or shrubs
- Managing stock to allow native forest to grow

Australian Carbon Credit Units (ACCUs) can be earned through carbon farming or abatement practices in projects registered with the Commonwealth Government's Emissions Reduction Fund (ERF). It is estimated that the carbon farming industry in Queensland could grow to around \$8 billion by 2030, generate new jobs, revenue streams and market opportunities especially for regional, rural and Traditional Owner communities.

The Australian Government purchases ACCUs generated from carbon farming and other projects to meet the international Paris Agreement emission reduction target to decrease GHG emissions by 25% below 2005 emissions by 2030 through The Australian Carbon Market. Some ACCUs have associated social and environmental co-benefits in addition to a carbon benefit and can sell for a higher price.

The Voluntary Carbon Market is driven by the increasing consumer preference for 'Carbon Neutral' or 'Carbon Offset' products. 'Carbon Neutral' is an internal certification when the producer stores or abates as much carbon as they produce, resulting in net zero carbon emissions. Carbon offsetting is a mechanism whereby individuals or organisations choose to purchase carbon credits or offsets from approved projects (including carbon farming) to reduce or eliminate their carbon footprint. Carbon offsets are available from projects that reduce overall carbon emissions including carbon storage in trees and soils or avoiding emissions from fire or emissions intensity from livestock.

There are four steps to getting involved with the carbon market:

1. Applying to register your project;
2. Contracts and auctions;
3. Reporting and auditing; and
4. Delivery and payment.

A Carbon Service Provider (CSP) can help with many of these processes, allowing for participants to focus on the needs of their property and increasing productivity.

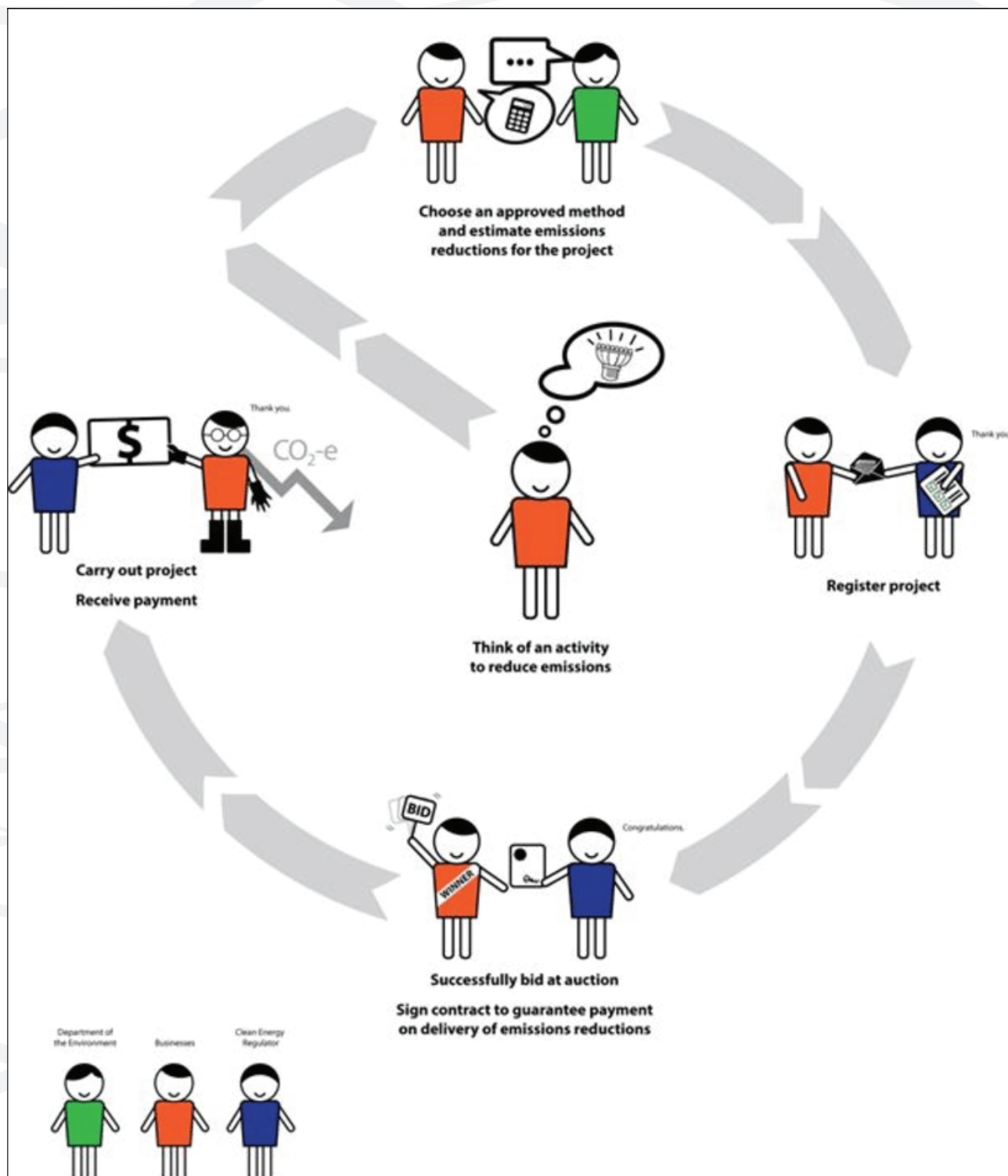


Figure 1. The steps involved in establishing a carbon farming project (Source: Department of the Environment. *The Emissions Reduction Fund - what it means for you*. Canberra: Commonwealth of Australia; 2015)





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### THE ERF'S BEEF CATTLE HERD MANAGEMENT METHOD

The Beef Cattle Herd Management method was developed by the Emissions Reduction Fund (ERF). It was designed to help land managers increase productivity with lower emissions, which is influenced by feed composition and herd management practices.

The results of these improvements include herds with a lower average age and higher weight gain relative to age, lower handling costs, improved animal health, better survival and growth rates and reducing or abating GHG emissions. Faster growth rates mean better meat quality and market prices; removing less productive animals and reducing stocking rates puts less pressure on pastures, so herds can be maintained longer through challenging climatic conditions. Using these methods and obtaining an increase in live-weight gain comparative to the baseline average indicates that carbon has been abated per kilogram of beef produced, therefore the project accrues ACCUs.

Producers can receive income through a registered Beef Cattle Herd Management project and implementing eligible activities to reduce or abate GHG emissions from livestock. ACCUs are generated when there is a reduction in methane per kilogram of beef produced or improvements made to production efficiency (abatement). Emissions are abated when efficiency and productivity increase because cattle produce emissions for fewer days and fewer animals are required for a given output. There must be an overall increase in live-weight gain within the herd in order to generate ACCUs.

These ACCUs will then be sold on the Australian Carbon Market by the Government directly or via an aggregator that trades large volumes of ACCUs and voluntary offsets. Where changes to management practices are also shown to foster additional co-benefits, such as increasing plant or animal biodiversity, there is the potential for carbon credits to be sold at a premium price by the private sector and State Governments like the QLD Land Restoration Fund. After listing, ACCUs are like shares and can be held or sold – it's entirely up to you. The process takes 18-24 months from project start to first payment if you choose to sell your ACCUs.



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### ELIGIBLE PRACTICES

Pastoral enterprises with registered Beef Cattle Herd Management projects must change their management by reducing the number of days over which emissions are generated. This can be achieved by:

- Increasing the ratio of live-weight for age in the herd, so target weights are reached earlier;
- Reducing the proportion of unproductive animals in the herd; and/or
- Changing the relative numbers in each livestock class within the herd to increase the herd's live-weight gain.

Eligible management activities that have been shown to achieve these goals include:

- Genetic improvement;
- Culling barren cows to improve weaning percentage;
- Establishing higher quality pasture;
- Installing new water points or pipelines to allow cattle to graze more widely and make better use of available pasture;
- Fencing to land type or livestock classes, to control herd movements and improve joining practices; and/or
- Providing a feed supplement all year round



## HERD EFFICIENCY AGGREGATION MODEL

To enable all producers to participate in the Carbon Market with the Beef Cattle Herd Management methods, SG NRM is proposing to form a Herd Efficiency Aggregation. This would combine herds across properties to reach the financially feasible minimum of 50,000 head in order to secure the services of a Carbon Service Provider such as Natural Carbon. Each property would not be affected by the methods chosen by other properties in their aggregation but would exist as mutually exclusive members of the aggregation to achieve financial feasibility.

SG NRM is looking to develop the Herd Efficiency Aggregation model in partnership with workshop participants so that it accurately reflects the best interests of north-west regional producers. The established model will form the basis of a potential future carbon farming project to be registered with the ERF.

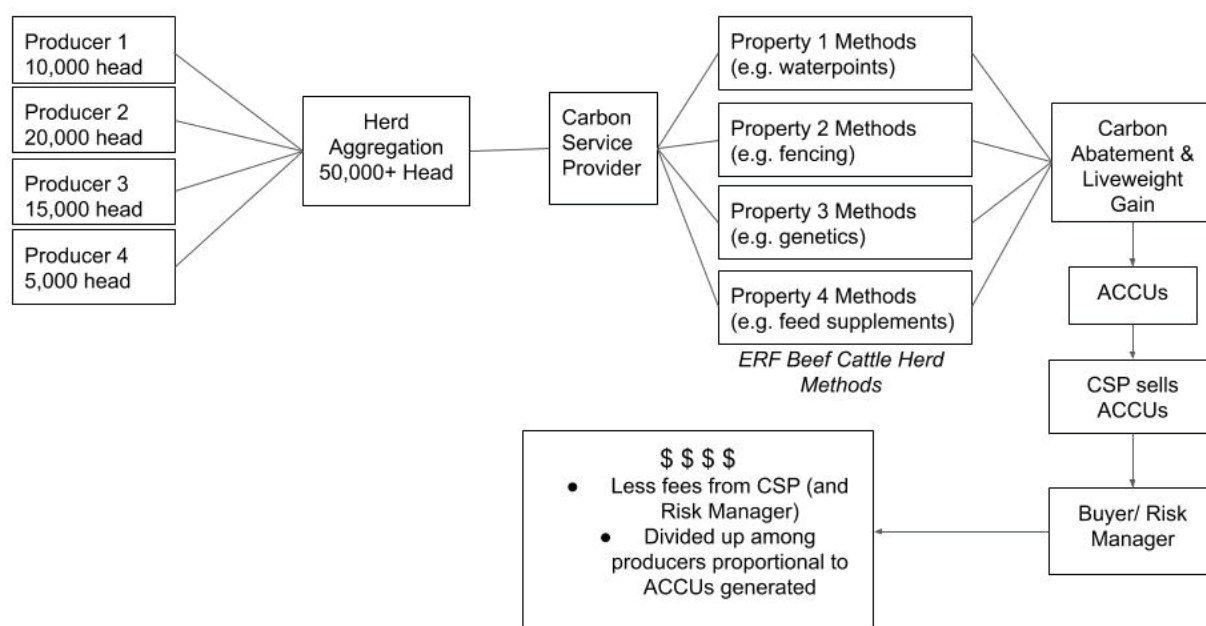


Figure 2. SG NRM's proposed Herd Efficiency Aggregation to allow producers of all herd sizes to participate in the carbon market



## REQUIREMENTS FOR PARTICIPATION

There are no obligations or costs to workshop attendees to take part in SG NRM's workshops. These workshops are to build regional understanding and for participants to give feedback about the market, methods and how an aggregation could be formed.

To participate in an ERF carbon farming project under the Beef Cattle Herd Management method the following requirements must be met:

- Herds must consist of cattle grazed in Australia and their feed must come principally from grazing or forage. Herds in feedlots are not eligible.
- Each herd must have continuity of management over time and be managed and pastured separately from other herds
- The composition of a herd may change over time, but the herd and animals in the herd must be able to be identified
- The liveweight gain of each herd must be positive for three years of the seven years preceding the project.
- At least one practice that can reasonably be expected to reduce emissions must be undertaken in each year of the crediting period. The practice can be a new practice or a variation on a practice undertaken prior to the project. Supporting evidence must be provided.
- At least three years of herd management and productivity data including purchases, sale weights, weaning and mortality rates by animal class are required to develop a baseline or footprint value is measured in t CO<sub>2</sub>-e (tonnes of carbon dioxide equivalent). Annual reporting over the life of the project will be compared to this baseline to determine how many tonnes of carbon dioxide equivalent are reduced or abated, and therefore how many ACCUs are generated.
- This method requires monitoring of the number and live-weight of cattle in each animal class in the herd, dates on which the cattle entered and left the herd, and details of any change in diet undertaken as part of the project. This information is required to calculate emissions. The Herd Management Calculator, available on the Department of the Environment website, must be used for these calculations. Monitoring of land on which projects are undertaken, all cattle associated with the project proponent's business operations and any changes in participating business operations is also required.

It is important to keep project records because they will be used to calculate the abatement that has been achieved by the project. These records can be gathered from a range of sources, such as a stock book, sale and purchase invoices and tax records. Projects are required to submit a report to the Clean Energy Regulator every one to two years. Approved projects must be audited by a registered greenhouse and energy (NGERS) auditor. A list of all registered auditors is available on the Clean Energy Regulator website.

## FREQUENTLY ASKED QUESTIONS

### What are the costs of participating in carbon farming?

There are costs associated with the implementation of herd management activities that are aligned with the Commonwealth's ERF Beef Herd Management Method. The herd method requires implementation of new activities such as new genetics, adding fencing and new water points all designed to increase live weight gain and reduce emissions intensity. These expenses are the responsibility of the producer.

In the model that our partners propose, there are no upfront fees to the producer for the services provided by the Carbon Service Provider. However rather than an upfront fee, CSPs receive between 20-30% of the ACCUs the producer generates.

### What effect does native title or leasehold have on my carbon project? What happens if I sell my land?

If you are a pastoral lessee, you are able to use leasehold land for a carbon project based on ERF's Beef Cattle Herd Method by meeting the eligibility requirements of the Emission Reduction Fund. If you are other than the registered owner on the land then a consent letter from the lease owner on the title is required, granting permission to the project and the Australian Carbon Credit Units (ACCUs) generated. Leasehold or a rolling term lease does not prevent you from participating, however, you should seek legal advice.

If your project is taking place on native title land, it is not currently necessary to obtain consent for abatement projects, such as the Beef Cattle Herd Method

If your project is on land held on title by a native title body corporate, then the consent of the native title body corporate as registered owner would be required. If your project is on a pastoral lease where native title is not extinguished, then native title consent may not be required as eligible interest holder consent is not required for this method.

If you decide to sell your land, a registered ERF project and contract can be transferred to new owners.

### What happens if I have a fire, flood or drought?

Natural events are unavoidable and under the herd method you are safeguarded against poor productivity and years where your emissions are greater than your baseline or benchmark.

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