

Carbon Farming in the Western Australian Outback

Summary of the Outback Carbon Farming Conference, Perth, 17 August 2016

The Outback Carbon Farming Conference was attended by over 100 people from a broad range of sectors. It aimed to provide a comprehensive update on the progress towards, the future potential of, and the key obstacles to the commencement of a commercial carbon sequestration industry in Western Australia's rangelands.

What is carbon farming?

For the purposes of this conference, the term 'carbon farming' referred to the production and sale of carbon credits through sequestration of carbon into vegetation and soil by allowing and encouraging vegetation to regrow. Management of grazing, fire and run-off, erosion control, active revegetation and other land management techniques can be part of this process. However, carbon farming has an 'additionality' requirement – it must sequester quantities of carbon into the landscape above and beyond what is achieved by 'business as usual' or basic legislative requirements.

Global and national context: why is there a market for carbon farming?

The Paris Agreement, reached in 2015 as part of the UN Framework Convention on Climate Change, set major goals for reducing carbon emissions and provided a powerful market signal for the value of carbon. Global and domestic policy suites are still in development, but there is growing demand for carbon sequestration capability – business understands that the economic impetus to a decarbonised economy has tremendous momentum.

In Australia, demand for carbon credits comes from three sources. Firstly, the government-funded Emissions Reduction Fund (ERF) which has a further \$800 million (a figure which may increase in future budgets) to spend on carbon reduction projects. Secondly, demand comes from 'heavy emitters' – private sector businesses needing to offset their high emissions. Thirdly, there is growing demand from the voluntary market – businesses looking to go carbon neutral ahead of the curve and thus retain their social license – satisfying customer demand for a carbon neutral product. An example is Austral Fisheries, which recently purchased carbon credits in the form of 190,000 native trees to offset an estimated 27,422 tonnes of carbon dioxide emissions.

As well as domestic demand, the Australian marketplace could become a major source of supply of carbon credits on the global market, thanks to low sovereign risk, a well-developed and well-governed scheme for managing carbon credits, and large areas of vegetated landscapes that have the potential for significant increases in carbon stocks.

Measuring carbon in the Outback

Carbon farming relies on the ability to measure carbon stored both above and below ground across a range of land and vegetation types. Measuring the biomass – and subsequently calculating carbon stocks – in plants is no simple matter, given the differing growth forms, sizes, shapes and plant tissue types. Methods for measuring carbon are becoming cheaper and more precise, but a formalised method for this in the rangelands has not yet been approved.

Significant work has been undertaken in WA to develop techniques for estimating carbon stocks in rangelands vegetation, including by remote sensing and through the use of drone technology, which facilitate the measurement of carbon across large, remote areas of land. However, until the 'rangelands method' is fully developed and approved by the Federal Government, the absence of a formalised method remains a major obstacle for the development of a carbon farming industry in WA's Outback.

Examples of carbon farming elsewhere in Australia

Landholders in western NSW have signed carbon contracts worth \$250 million in recent years. Other parts of Australia's eastern states are similarly tapping into the growing carbon market.

A case study was presented to the conference of a family-run property near Rockhampton in QLD. On this property, carbon farming is an integrated part of the family's diversified pastoral business, generating a 15% return on investment annually. Through managing the property for carbon sequestration alongside the existing beef enterprise, there is evidence of significant benefits to the land and to the business. These include improved soil fertility, increased stock carrying and water holding capacity, and an ability to better manage the risks of price fluctuations and drought due to income from the sale of carbon credits.

Is there a case for carbon farming in WA's Outback? What is the potential?

There is significant potential to increase carbon stocks across many land types in WA's rangelands and to earn carbon credits in doing so. Many land managers in WA are already undertaking land management practices that work to sequester carbon, even though they are currently unable to tap into potential economic returns available through the carbon market.

Carbon farming could supplement pastoralists' incomes and create a safety net to buffer against the boom and bust cycles that characterise the Outback. This would strengthen the social fabric of the Outback and potentially reduce the need for government assistance and social programs. It also holds the promise of a once-in-a-lifetime opportunity to see large degraded areas returned to productivity without significant state government funding.

An example of the economic potential of carbon farming in WA, highlighted in a 2012 report commissioned by the Department of Agriculture and Food, is the Murchison region. Using a conservative estimate of 30 tonnes of carbon sequestered per hectare, the 1.9 million hectares of land suitable for carbon farming and rangelands regeneration work in the Murchison could generate between \$570 million and \$1.3 billion, depending on the per tonne price of carbon at the time.

Key obstacles to establishing a commercial carbon sequestration industry in WA's rangelands

A summary of key obstacles to a carbon industry in WA's rangelands was compiled by the Conference Convenor throughout the day and then presented to attendees for feedback. After discussion the following obstacles were noted.

1. The need for final development and approval of the **rangelands method** by the Federal Government;
2. Absence of an **investment/approvals pathway** for carbon projects in WA's rangelands;
3. Absence of policy development to activate **carbon rights in WA's rangelands**;
4. Absence of a **clear economic case** backed by research and analysis for carbon farming on rangelands tenures;
5. A framework and appropriate resourcing for negotiating **native title agreements**;
6. Political/legislative differences between **state and federal** governments, particularly with regard to savannah burning;
7. Availability of tenure which encourages and provides a more certain legal framework for **diversified land uses**;
8. Development of **low-cost modelling and remote sensing** technologies and techniques to economically cover the extensive and diverse rangelands;
9. Market uncertainty over **politics and pricing**;
10. Costs and risks associated with being a **'first mover'**;
11. A number of key technical and policy **knowledge gaps** as defined below.

Knowledge gaps

Filling these knowledge gaps would reduce the development cost of a project, reduce the financial risk for investors and service providers, and allow the industry to move forward with confidence.

1. What is the **baseline level of carbon**, the **carbon storage potential** and **recovery period** required for the soil and vegetation carbon sinks of the key land units?
2. What is the most **cost-effective rehabilitation technique** and what its **cost of rehabilitation** for each land unit?
3. What is the **'optimum' vegetation assemblage** for each land unit that is both highly functional and has a high carbon storage potential?
4. **Improvement of the FullCAM model** to accommodate rangeland ecosystems and management regimes;
5. What will be the **impacts of predicted climate change** on carbon that is stored in the soil and vegetation in each land system?
6. Further clarity is needed regarding whether the **additionality requirements** under the Commonwealth *Carbon Credits (Carbon Farming Initiative) Act 2011* are consistent with management requirements under WA's *Land Administration Act 1997*.
7. Are there innovative models for how native title parties and lessees can agree to **carbon rights and management arrangements** to the benefit of both, possibly without an Indigenous Land Use Agreement (ILUA) or by an easier path towards an ILUA than what currently exists?
8. What are the most efficient and cost-effective strategies for managing **total grazing pressure** across the diversity of locations and circumstances?

The way forward: top priorities

While knowledge gaps remain, the technical aspect of carbon farming – measurement and sequestration techniques – are well advanced. The markets exist and will continue to grow, and development and approval of rigorous methods would appear to be merely a matter of time.

What emerged from conference presentations and discussions as top priorities were:

- The need for government to develop an investment pathway and clear policies for the carbon industry in WA's rangelands;
- The activation of carbon rights using an appropriate policy model for distributing the proceeds from carbon credits and managing related contracts;
- The establishment of forms of tenure which would provide a more certain legal basis for diversified land uses and associated investment;
- The development of business cases for carbon farming in the Outback.

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