



IMPACT CASE STUDY
June 2018



Greenhouse gas mitigation in the land sector

CSIRO is working with communities, industries and government to reduce agricultural emissions and create production, livelihood and environmental opportunities for the land sector to benefit from carbon markets.

The challenge

By 2030, the Australian Government is committed to reducing Australia's GHG emissions by 26-28 per cent below 2005 levels. Agriculture and forestry can make important contributions to lowering Australia's GHG emissions, by reducing the sector's own emissions and increasing carbon storage in trees, soils and landscapes. Well-designed incentives and practices that achieve GHG abatement can enable wider benefits to productivity, rural livelihoods and the environment and help Australian agriculture achieve price premiums for low carbon products.

The response

CSIRO has played a key role in the development of land-based GHG mitigation, working with industry, communities and regulators. This case study focussed on three indicative projects from the portfolio of work.

NORTHERN BEEF METHANE EMISSIONS

In 2014, CSIRO was commissioned by the Australian Department of the Environment to undertake an analysis of Australian data on methane emissions from cattle. Some 1,034 individual animal records of daily methane production were analysed to reassess the relationship between methane production, dry matter intake and gross energy intake. The new analysis found that contribution of emissions by northern beef had been overestimated by approximately 30%. This was embedded into Australia's national accounts in 2017.

SAVANNA MANAGEMENT

For the past three decades CSIRO has worked with partners to better understand the management and impacts of fires that burn more than one quarter of northern Australia's savannas each year. This understanding is generating traded abatement under the Emissions Reduction Fund as well as creating jobs on the land for traditional owners and delivering improved environmental outcomes.

FUTURE FEED

FutureFeed has been developed in a collaboration between CSIRO, MLA and James Cook University. It is a cost-effective seaweed feed additive which uses a variety of Australian seaweed to significantly reduce cattle methane emissions and energy saved would be directed to live weight gain. Laboratory research showed that adding dried seaweed to a cow's diet can reduce the amount of methane it produces by at least 99 per cent and improve production of animals (both dairy and feedlot).

The impact

NORTHERN BEEF METHANE EMISSIONS

The analysis of new data on methane emissions from forage-fed cattle led to a

revision of the National Greenhouse Gas Inventory. The forage-based cattle industry has now been appropriately assessed for its share of Australian greenhouse gases, ensuring the sector is not unfairly represented in the National Inventory.

SAVANNA MANAGEMENT

The savanna zone in total comprises 15 percent of the Australian continent. The Emissions Avoidance methods are making real differences to fire management in northern Australia with associated co-benefits for remote livelihoods and protection of biodiversity and infrastructure. Carbon offsets are being produced as a result of these activities and helping Australia reduce its emission liabilities, and overall improving the economic efficiency of meeting our emissions reduction targets.

FUTURE FEED

FutureFeed will result in a reduction of GHG (methane) emissions from cattle and higher farm productivity (because less feed will be converted to methane). Although it is yet to be commercially adopted, if 10 per cent of Australia's feedlot and dairy cattle were fed this product, Australia's GHG emissions would be reduced by 3 million tons.

The net present value (NPV) for Savanna management and Futurefeed is estimated to be \$166.6 million (2017-18 dollars), with a benefit-cost ratio (BCR) of 40.6¹

¹. ACIL Allen Consulting. 2018. Greenhouse Gas Mitigation – An Independent Assessment. ACIL Allen Consulting: Canberra

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