

[REDACTED]

13 December 2023

Department of Agriculture, Fisheries and Forestry
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Electronic: haveyoursay.agriculture.gov.au/agriculture-and-land-sectoral-plan

To whom it may concern

Re: Submission to Agriculture land and emissions discussion paper

[REDACTED]

Q1. What are the main opportunities to reduce emissions and build carbon stores in agriculture and the land? What are the main barriers to action?

[REDACTED] the majority who operate the farm as a multi-species integrated farming system with over 124 different crops grown in the region, there are not the same opportunities available as there are to other agricultural systems for carbon storage. This farming system is one of intensive agriculture reliant on fertiliser and water to grow the crops, electricity to deliver the water to the farm and then more electricity to pump the water around the farm. For those with packing sheds on the property there is also the requirement to cool the horticultural produce before it is despatched to market.

For those with packing sheds there is the opportunity to place rooftop solar to assist with reducing electricity usage and decrease emissions. For cane growers, the ability to place solar panels is limited to areas over the pump shed to ensure productive land is not lost, meaning that systems are generally 5-10kW in size. These panels are above 45kW motors and do not cover all the electricity use throughout the year. Land in the [REDACTED] Irrigation Area is not being dedicated to solar panels as the value of land is between \$25,000 and \$120,000 per hectare and is currently too valuable to host solar panels.

With orchard trees currently excluded from carbon farming, the main method of carbon storage on the multi-species integrated farming system is via soil carbon storage methods. This is a slow way of capturing carbon in a farming system that requires cultivation that decreases soil carbon, to enable the quick swap between crops to suit climatic and market requirements. Soil carbon is unlikely to be a reliable method of carbon storage for the multi-species integrated farming system currently in use.

The use of agricultural EV's is unlikely to occur quickly as many of these vehicles are still in the early testing phase with no to low levels of availability in Australia. Given the various sizes of the tractors in the marketplace it will take a while to replace just some of the sizes of tractors in the marketplace, especially the larger tractors used for cultivation.

Q2. How can we progress emission reduction efforts whilst also building resilience and adapting to climate change?

Currently it is an expensive process to make the transition to reduce emissions and build resilience in agriculture, therefore reducing those willing to make the changes to new agriculture small farms less than 20 hectares, who are not into large commercial production, as they are targeting niche markets with niche products, or the large corporate farming operations with better access to finance options than the majority of mums and dads family farms. It is these farms which make up the majority of farming enterprises in [REDACTED] and are the same farms which are generally working within close margins in their business. These family farms will find it hard to adopt many of the emission reductions because “it is hard to be green when you are in the red”. In other words, for growers to fully adopt emission reduction targets and other environmentally focussed targets, there needs to be a financial reward to the grower as it currently costs more to align with green farming methods compared to normal farming methods. Example - currently the use of compost and manures is more expensive to use and harder to control the nutrient release compared to granular fertiliser. Also, there will not be enough compost close to agricultural areas to be used by cropping industries. It is also expensive to transport as it is a light product compared to granular fertiliser.

Q4. How can the Australian Government bring together existing effort and new initiatives into one coordinated plan?

If there is going to be a continued push for ESG (Environmental, Social and Governance) by businesses such as banks and other finance businesses based on their shareholder’s guilt for living in a concrete jungle, there needs to be a consistent set of operating guidelines for these programs so that everyone works off the same set of rules. The ESG programs must also pay the grower for their effort in providing these programs. An example of where ESG works and fails is with [REDACTED]

[REDACTED]

[REDACTED] The customers despite demanding ESG compliant pork, are not willing to pay the true cost of meeting the compliance and so the cheapest soybean meal is used rather than the most sustainable product.

Q5. What are the most important options to be further adopted or supported, looking in the short and longer term?

To reduce emissions the multi-species integrated farming system adopted by [REDACTED] cane and small crop growers utilises crop rotation to assist with disease and pest reduction of the horticultural crop as well as the cane. This reduction in disease and pest pressure means the crops are healthier and are able to take up more of the nitrogenous fertilisers, reducing losses to nitrous oxide emissions. The same occurs when a cane crop follows the small crops and utilises its broader and deeper root systems, generally 1m deep but has been recorded at over 3m in depth, to remove nitrogen from depth when compared to the small crops, which usually only have a root system that is 30cm in depth. In doing this the cane crop does not require additional nitrogenous fertiliser at plant and removes excess nitrogen from the soil profile, reducing the amount available for nitrous oxide losses. This farming system can be improved by the use of nitrogen inhibitors to reduce the nitrous oxide emissions.

Other parts of the farming system that can help reduce emissions is the adoption of controlled traffic farming systems which reduces fuel use by reducing wheel slip. The purchase of newer, more efficient tractors will also help with emissions reduction.

It is suggested in the discussion paper that using legumes as part of the crop rotations in the farming system reduces emissions, this is not as efficient as most people realise in reducing nitrous oxide emissions. Yes, it is better compared to using natural gas to create nitrogen-based fertilisers, however from a nitrous oxide emission perspective it is no better. [REDACTED]

[REDACTED] This is because the natural biological process of having nitrogen in the soil with a carbon source and wet soil conditions creates the perfect environment for the release of nitrous oxide gas. In a similar study in [REDACTED] it did not matter whether the nitrogen source was from fertiliser or a range of legume crops, once the paddock was irrigated to grow the cane, there was similar levels of nitrous oxide loss from the soil.

Realistically, the best options to try and reduce emissions are to focus on manmade emissions and not focus on the emissions such as nitrous oxide which occur naturally as part of biological processes in the soils. The same can be said of methane from ruminant animals. These emissions have been occurring since there have been ruminant animals and to try and reduce them to zero is only possible when there are zero ruminant animals producing methane.

Q6. What are the practical solutions to increase uptake?

The practical solutions to reducing emissions from agriculture are limited but are focussed on reducing the costs of the options available to growers. Until the cost of nitrogen inhibiting products applied to fertiliser become more affordable uptake will be slow, one possible solution is a rebate paid to growers who use these products based on emissions saved at a carbon price equivalent value.

When it comes to capital items such as machinery, irrigation equipment etc options such as instant tax write off plus the option of a reduced rate of finance as previously provided by the Clean Energy Finance Corporation, will provide incentives for growers to update machinery that is more energy efficient and therefore reduces emissions.

Q7. How do you see the agricultural and land sectors contributing over the medium and longer term? What are the opportunities to deliver emission reductions in parallel with wider goals?

In the intensive agriculture sector gains are going to be limited, especially intensive mixed cropping as found in the multi-species integrated farming system used in [REDACTED] because to produce food the land needs to be cultivated to some degree, machinery needs to be used for cultivation, spraying, harvesting and fertiliser needs to be used across much of the system as it is near impossible to create enough compost near the farming areas.

Orchard agriculture may have a larger benefit if it is included in the carbon farming method that it is currently excluded from. Most orchards are in place for at least 25 years which displays a level of permanence that is not always present with soil carbon that can be a bit more transient.

Q11. What skills, knowledge, and capabilities do you think producers and land managers need to implement change? What information and data would help them make decisions about emission reductions and sustainable land management in the short and longer term?

Everyone should realise that emissions reductions and sustainable farming practices do not always align and at times are completely removed from one another. For example, green cane trash blankets have been one of the sustainable measures adopted by the majority of cane farmers to reduce sediment loss, reduce herbicide use as well as better manage irrigation and rainfall infiltration. However, from an emissions point of view this trash blanket provides the carbon source that is used to create nitrous oxide emissions when the soil is wet. It would be better to burn the cane prior to harvest if we are more worried about emissions than sustainable farming. This means to maintain the sustainable farming system there is an additional cost, in this case nitrification inhibitor coated fertiliser, which given that sugar is traded on the world market and growers are exposed to agricultural business supported by subsidies, can put an economic sustainable position of the [REDACTED] cane farming business in jeopardy.

In the multi-species integrated farming system with over 124 different crops grown in [REDACTED] there needs to be lots of time and money spent on assisting growers adopt practices that reduce emissions as well as maintaining the clean and green sustainable image that has taken decades to acquire.

It should also be acknowledged that the majority of practices that can currently be adopted for reducing emissions involve the farming enterprise spending more money thus increasing the cost of production of food items that do not necessarily go up in price at the farmgate level to reflect the increased cost of production. Even products that the State and Federal governments are banking on to reduce emissions have the potential to increase the cost of production. The use of solar and wind renewable power is likely to increase the costs of farming for intensive agriculture that uses electricity to pump water and cool produce, and in the future charge electric tractors. Not from an increase in the generation costs, which is acknowledged to be near zero though will increase as the borrowing finance costs increase with rising interest rates, but from the cost of transmission of the renewable energy. ABC reports indicate that the cost of new transmission lines to carry the renewable energy is over \$400 billion and one estimate of over \$1.4 trillion. If these new lines are not quarantined from the pricing pathways, they will lead to an increase in the retail cost of power as based on the current Queensland pricing mechanism, Energy Queensland is able to charge approximately 10 percent on the value of its assets, which include poles and wires. This means that the Queensland energy users of the East Australia Power grid will need to pay their share of an additional \$40 billion spent in 2023, per year for electricity in the future.

With all that has been said in answering the target questions, cane farmers in [REDACTED] are adaptable and with a financially stable and profitable income, will adapt their multi-species integrated farming system to one that produces less emissions in line with government expectations. If that financial stability is not met from their farming enterprise, the adoption of emission reducing practices will be slower.

Should you have any specific questions please contact myself or [REDACTED]

Yours faithfully

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