

**Name:**

I am a sheep and cattle farmer from the SW of Victoria and our family have been here for 117 years. I was educated in Melbourne and then did a Diploma of Farm Management at Glenormiston Ag College. Over I done other grazing related courses as well..

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**Which of the following best describes your situation?**

Farmer/producer

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**Are you responding on behalf of an organisation or industry body?**

No

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**How would you like to respond?**

a. Answer discussion paper questions via the online survey

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

In Agriculture there are many options for us to do both. I will be suggesting 2 methods of activation but used with distinct variations of each but "regulation" and "incentives" are the words - so all of my recommendations will need to be one or the other and as mentioned both will have subtle variations in application. So when I say "encourage" I am meaning to use either of those 2 "leavers"! So in no particular order :- 1. Soil Carbon projects - need to be encouraged with a cheaper process to measure soil carbon and get people involved. 2. The insetting program for on farm vegetation - Accounting for Sequestration of Farm Trees needs to be released and activated 3. Along those lines with the focus on biodiversity in mind - the same applies to the Nature Repair Bill 4. encourage more rural properties to have solar panels and be self sufficient - give incentives/regulate the power companies to give a realistic price for the feed in tariff of electricity generated on farm 5. encourage research into alternative fuel production - especially small units to be used on farms - eg using plasmalysis to create hydrogen from methane or bio fuels from waste products - straw etc 6. encourage fertilizer companies to "coat" the nitrogen fertilizers to reduce the nitrous oxide emissions - this should be a very high priority! 7. encourage farmers to plant more trees 8. encourage and promote new technologies that will save time and energy - eg remote sensing of water points. 9. encourage more research and development into plant species that will be more resilient and have deeper root

systems to promote carbon sequestration in all bioregions of australia, 10. encourage the research and development of feed additives for livestock to reduce methane even just a bit 11. so the barriers to these ideas are probably money, skills and time !

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

By using new technologies and products [ so pretty much all of the above points ] ] we as cattle producers are still producing our product but just getting more efficient and reducing emissions at the same time. More Soil Organic Matter is more Soil Organic Carbon [ about 60%] which will hold a lot more water and produce more grass and so there is more ground cover and less bare ground - so a lot more resilient. We can measure our grass remotely now as well - every week I get the data uploaded into my phone and grazing management app. so can make decisions on moving cattle or not. so probably the biggest hurdle could be educating the farmers - the MLA are already involved but it needs to be applied more widely. Using livestock [ cattle, sheep or goats] and their management is essential in the process of drawing down that legacy load of carbon dioxide and locking it up deep in the soil and using vegetation on about 50% of Australia's landmass that we, as humans cannot eat.

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### **Are there initiatives or innovative programs underway that could be applied or expanded on at a national scale?**

Any work related to the management and care of soil is highly important. The ecosystem services of our biology both above and below ground is highly valued. We need to encourage more work on dung beetles. We need to encourage and identify the benefits of the soil biota and how to maximise their value and not destroy them with unintended management. There is little understanding of the amazing relationships that fungi have with plants - this is how carbon is locked into the soil for a 1000 years!

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

In terms of soil - get the CSIRO to review all their previous work on soils and start again with fresh eyes. It's all there somewhere. The world of animals and plants is complex - it is a biological system so one action in one area could have a huge ripple affect so this could be positive or negative! Decisions should be made on a HOLISTIC basis - so taking the WHOLE into account. One of the starting points should be FOOD SECURITY - so all decisions made and outcomes developed should not impact the ability of farmers like us to produce high nutritional value food to feed thousands and thousands of people.

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

For our farm - 85% of our emissions are methane, we have increased efficiencies and have a low intensity relative to the industry so our next best option is to use a feed additive of some sort to reduce the production of methane. With our soil carbon project and vegetation carbon that will pretty much make us carbon neutral. The coating of fertilizer would be another very beneficial step to eliminating nitrous oxide production. The next step would be our transport but this makes up only 1 % of our emissions, but generally there is an urgent need to reduce the use of fossil fuels and encourage alternative fuels but also keep promoting the wide use of electric vehicles.

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### **What are the practical solutions to increase uptake?**

Judicious use of the 2 leavers - regulation and incentives! Obviously, the regulatory path is a bit fraught given the implications to society. So the incentives path is much more acceptable and I think industry [ and especially those in the agricultural supply chains with food ] would be and in fact are using the existing frameworks of the things like Science Based Targets and Taskforce for Nature Related Financial Disclosures to both source their supplies and meet their regulatory requirements [ often globally ] so they are happy to help us [ as suppliers ] to lower our carbon footprint with "incentives" [ especially once we get the insetting methodology out in the open ] which also reduces the companies Scope 3 emissions. I have also mentioned earlier incentives for electricity production and fertilizer coating.

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

Agriculture has a huge part to play in reducing global emissions because "we capture carbon for a living" - that is, all the grass we grow relies on carbon dioxide and rain [ which are the 2 bi-products of methane after it is broken down in the atmosphere after 10 - 12 years ] and is called the Carbon Cycle. So this has been happening for millions of years with ruminants emitting methane and the cycle continues. At the same time we are producing a protein that is dense and nutritious and a small portion carries all the trace elements and vitamins that are bioavailable with high levels of iron and zinc and omega 3. So food security is a very important extra goal. Other goals are biodiversity and ecological outcomes which are equally important. There is growing interest in land managers being more aware of the ecosystems that support their beef industry and with incentives like the Nature Repair Bill and the Accounting for Sequestration of Farm Trees methodologies and many other state based incentives there are more and more areas being fenced off and managed for their biodiversity values. The evidence of this is confirmed in the annual Australian Beef Sustainability Framework reports. The benefits of building soil organic matter, meaning more carbon, more grass, more resilience and beef/sheep that thrive as well as having areas of trees and creeks and [ in our case ] fenced off dams surrounded by trees that all add to the ecosystem services building biodiversity and make a fantastic place to live - are not to be taken lightly!

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**How can the Australian Government better support agriculture and land sectors to:**

**a) drive innovation**

**b) build capacity**

**c) ensure the system enables emissions reductions**

So a and b together - the Government can create a structure or a process that the market can use - as mentioned like the Nature Repair Bill and Accounting for Sequestration of Farm Trees that are methods strictly operating under strong guidelines and which the supply chains would be more than happy to "help" with - that is pay the land managers for tonnes of carbon sequestered or certificates of biodiversity so that they [ the companies ] can meet their ever increasing ESG requirements. This process will create a lot more interest [ with the financial incentives ] and so lead to more emissions reductions, more biodiversity areas and won't cost the Government anything! But it is critical to get schemes like these and no doubt others developed and out to industry as quickly as possible ..... we don't have much time! The other imperative is more research into R & D for soil biology. Also important to do R & D on carbon measurement systems - you will need to "license" these technologies so that 6 to 10 companies have the authority to measure - and so be verified. It is critical that everything is science based and able to be verified.

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**What new initiatives could the Australian Government design that would support emissions reduction and carbon storage in agriculture and land and help ensure a productive, profitable, resilient and sustainable future for the sectors?**

wide breeding and distribution of dung beetles converting urban waste into compost on a huge scale so farmers can use on their land to replace fertilizers. encourage solar recharging outlets all along the major roads - self contained with built in batteries. look into biochar and building of soils like Terra Preta encourage development of soil additives that help the soil biology do what they do best - extract carbon from plants and lock it up in the soil

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**A consistent and trusted approach for assessing and reporting emissions is often raised as a barrier to reducing emissions. Is there a role for the Australian Government in addressing this concern, and how can producers and land managers be supported?**

Yes it is very important to get the measurement done in a correct and transparent process especially with carbon in the soil - we need technology that will do it quickly, cheaply and for the data to be unassailable. In terms of measuring emissions - only the land owner can do that but my view is that it should be compulsory [ somehow! ] when you supply cattle to a supply chain some of their requirements will involve a carbon footprint and other data so maybe the industry will make the change for those that haven't provided the information yet.

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**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 emissions reductions and sustainable land management in the short and longer-term?**

My view is that it should be market driven - if the government can provide structures/processes for the supply chain to use then the farmers will respond. It will mean market access for them - if they can provide the information to the company, the company will buy their cattle, if they don't they will not receive the best competition at the sale yards. We are already facing this issue now with a threat from the EU market on "de-forestation" and only those who can tick the box will get access. Other than that - just a slow, steady repeatable story about what future markets are looking for.

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**Do you have any additional views or feedback that you would like to include in your response?**

I think the government has to be brave - we need to try lots of different things in the future - new technologies, new processes, new materials, new machines, do things differently - not all of these will succeed but some could change the world. And that would not be a bad thing!

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**Is your response confidential?**

No

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**Do you agree to your response being published on our website?**

Yes

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**I have read and understood the privacy notice and consent to the collection, use and disclosure of my personal information as outlined in the privacy notice.**

Yes

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**Confirm that you have read and understand this declaration.**

Yes

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