Regenerative Agriculture sheep farmers in Australia, we need you!

What is regenerative agriculture? *Regenerative agriculture* is a philosophy that aims to improve soil health, biodiversity, nutrient cycling and carbon content by reducing soil tillage, reducing use of synthetic fertilisers, improving ground cover through use of multiple pasture species and implementing short-term rotational grazing management practices, but definitions vary.

Aim of this research: To co-develop profitable, sustainable, practical pathways for reducing farm greenhouse gas (GHG) emissions, improving profitability and biodiversity of sheep farms. Ideally, we seek farmers who have recently adopted management practices aimed at either improving carbon storage, soil health, biodiversity and/or grazing management, with an overall aim of improving sustainability.

What is in it for me? Participants will receive farm-specific reports with scientific information on whether engaging in carbon farming (ACCUs) or biodiversity markets would be economically or environmentally worthwhile endeavours. **The total value of this information to the participant would be worth over $50,000**. Specifically, participants will receive tailored information on:

1. Profitable pathways for reducing net farm greenhouse gas (GHG) emissions and becoming carbon neutral (e.g. improving soil carbon, planting trees, reducing enteric methane etc)
2. Opportunities for improving carbon storage and biodiversity on farm
3. Projected impacts of climate change on farm, as well as the relative change in pasture and livestock production in the absence of adaptation
4. Practical options for improving pasture and livestock production
5. Opportunities for income diversification, e.g. the value of carbon and biodiversity financial income relative to income from commodities produced on farm (e.g. wool, meat, grain)
6. A comparison of the productivity, profitability and GHG emissions of participant farm management with that of similar farms under more 'conventional' management in the same region
7. Media attention on the participant's farm and farming methods, and translation of positive results from the participant's farm to others
8. Documentation of the participant's results as part of extension and peer-reviewed literature
9. Exposure of the participant's farm to the broader industry (farmers, RDCs, processors, retailers etc)

How: Each case study farmer participant will provide information on livestock and pasture production, soil types, financials, management, property location and size to researchers as part of the Carbon Storage Partnership. All information collected will be kept confidential and will be used to calibrate a range of models to ensure credibility of simulated pasture and livestock production, biodiversity, natural capital (trees, water, land etc), profitability, soil fertility and carbon. A number of adaptations partly suggested by the case study farmer and industry representatives would be modelled. Analytical processes will be refined with the participant (case study farmer/s) over two years. As part of this, the project team will compare the grazing management and natural capital outcomes of farmers practicing regenerative agriculture with those practicing more conventional farming methods.

How much time will it take? The total time requirement will be around 5-6 days (comprising visits from the project team and extension events, including field days) as well as 6 one-hour sessions online (for helping refine results and tailor the modelling). Input into the project would occur on times/dates that suited the participant.

Cost/remuneration: Participation would be voluntary. We estimate that the scientific data and information produced would be worth up to $50,000 – the cost to the participant would be nil. The participant's business activities may also be promoted via extension, resulting in further awareness of the activities conducted by the participant.

Who: As each analysis will be very detailed and scientifically rigorous, the project team will only engage four regenerative sheep farmers across Australia. These will be selected based on location, evidence of good record keeping and willingness to engage over two years. All farm businesses that currently farm more than 100 sheep (wool production) and who practice sustainable farming methods in line with those at the top of this document are eligible to apply.

Further background: Interested participants may wish to view this YouTube video: **Carbon farming: market risks, rebates, types of greenhouse gas emissions and accounting tools**

Please note, we seek only sheep farms practicing methods aimed at improving soil health or carbon storage, biodiversity, pasture diversity and/or grazing management with an 'improved sustainability' mindset.

If you are interested in participating, please send the following to A/Prof Matthew Harrison: matthew.harrison@utas.edu.au

1. Would you class your farming practices as "regen ag" or "agro-ecological"? (this could be conducting any of short term cell grazing, implementing multi-pasture species mixtures, improving soil carbon, improving biodiversity etc) **If yes please state how**.
2. How long have you practiced regenerative agriculture? e.g. 2 years
3. Nearest town/s and postcode e.g. Sea Lake Vic, 3533
4. Farm size in hectares e.g. 300 ha
5. Enterprise/s e.g. self-replacing merinos, purchase/sell wethers
6. Type of grazing management (cell grazing, rotational etc)
7. Typical stocking rates (e.g. 20 DSE/ha)
8. Annual average rainfall mm/year for the farm e.g. 500 mm/year
9. Do you have good records of livestock numbers sold, liveweight (yes/no)
10. Have you measured soil nutrients regularly (yes/no)
11. Have you ever measured soil carbon on your farm (yes/no)
12. If you have measured soil carbon, how long have you been doing this?
13. Have you planted trees on your farm in the last 5 years? If yes how many hectares or plantations (roughly)
14. Have you made any changes to your farm to measure or reduce greenhouse gas emissions? If yes please state what changes were made and why
15. If you wanted to undertake a carbon farming project, what top three things would you be most likely to try?
16. Would you be willing to share your annual farm income, costs and expenditure with the project team?
17. How do you seeing your farm changing in the next five years. (1) much the same (2) more biodiversity (3) more carbon farming (4) more biodiversity and more carbon farming (5) going backwards (6) unsure (pick as many numbers as you like)
18. Are you or have you been involved in the Emissions Reduction Fund (ERF)? If yes what activities have been implemented?
19. What are you major focuses in farming? (1) Production, (2) Profit (3) improving sustainability (4) handing it down to future generations (5) biodiversity (6) all of 1-5 (7) other- please state

20. Have you made any changes to your farm system with a specific intent to improve biodiversity on farm? (yes/no)
21. **Would you be willing to implement prospective modelled adaptations from this project provided they were viable? (yes/no)**