



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

Yes


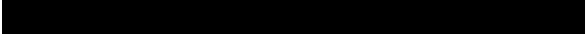
Who are you responding on behalf of?



How would you like to respond?

a. Answer discussion paper questions via the online survey

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

Utilisation of organic waste material for biochar production for direct land application, addition to livestock feed rations to pass through animal and sequester at depth using dung beetles. Barriers incl. investment / return on investment of biochar via pyrolosis due to capital cost of pyrolysis unit and transport of feedstock material. In addition, there is no biochar methodology approved with the clean energy regulator.  understands that ANZ Biochar is working on . Two methodologies are required, one for direct soil application for biochar and the other is for livestock methane mitigation (@47% reduction - Melissa Rebbeck). Investment in biochar research is needed to develop prescriptive biochars to address known soil constraints based on different organic feedstocks. Regarding dung beetles there is difficulty in accessing dung beetles for nurseries / sourcing seed stock of different species of dung beetles is difficult. Suggest there is funding for dung beetle nursery establishment / maintenance / work with schools etc.

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

Biochar is well known for sequestering carbon, increasing the soil moisture holding capacity, improving soil to plant microbial relationships etc. reducing reliance on chemicals. Additional income for waste organic biomass (e.g. crop residue such as rice is currently generally burnt in the field producing air quality issues (PM10 and 2.5). Utilisation of this material potentially provides an additional income source for farmers. Increasing soil moisture holding capacity via biochar, reducing chemical input costs and having additional / diversified income streams builds resilience and adaptation to climate change. [REDACTED] Industrial Hemp processing (decortication) as a diversification option for farms and potential carbon sequestration option (methodology being developed for sequestering of up to 20tns Ha CO2e for a 3 month growing period. [REDACTED] value adding via hemp brick production which is more carbon friendly than existing bricks and provides long term carbon storage, improved thermal insulation to reduce building energy needs. We are currently in talks with [REDACTED] products and will be seeking funding for a business case.

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

[REDACTED]

The project was also going to account for social benefits. Monitoring was going to use a basket of metrics and novel biodiversity monitoring technology (e.g. eDNA) and employ local TO's for on ground monitoring over time to inform outcomes using the COVRAM method. We believe this process can be applied at scale across Australia and would receive local buy in, jobs, support farm income diversification and build connections between landholders and First Nations. We will be pursuing funding for this project in the future.

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

Support / co-invest in pilot projects being developed (e.g. circular economy Precinct, biomass to bioenergy plants, biochar value adding replace fossil fuels / reduce sovereign risk via import replacement. Lessons learned / case studies to be communicated by the Australian Government showcasing what can be achieved and the cost-benefit analysis. The government needs to resource carbon offset methodology introduction for biochar and Industrial Hemp growing on farm and reducing embedded carbon footprint of houses to incentivise uptake. Some businesses such as [REDACTED] are already accessing the international market for EU ACCU's relating to crop residue biochar production.

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

Native fodder shrubs such saltbush are a long-lived carbon store. The shrubs do not meeting methodology requirement for carbon planting. Chenopod country plays a valuable role in biodiversity protection and by enabling access to the carbon market this would provide access this carbon market to incentivise protection of these lands and diversify income streams for farms. Other options regarding biochar for land application and livestock feed application have huge potential, and supporting new industries, especially Industrial Hemp as it can produce 25,000 different products. Both biochar and Industrial Hemp can produce products currently manufactured using fossil fuels.

What are the practical solutions to increase uptake?

Adopt change methodologies with the Clean Energy Regulator and provide other financial incentives for pilot programs to showcase opportunities.

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?

In addition to items already outlines, Biochar feed additive reduces methane production by 47% also has a co-benefit of increasing livestock feed conversion efficiency and therefore profitability strengthening resilience and adaptation. Utilisation of waste organic biomass improves air quality (e.g. less crop residue burning), and biochar creates a beneficial microbial harbourage and reduces reliance on chemicals inputs and associated emissions. A local forest has a build up of coarse woody debris blocking flood runners with log jams, eroding cultural sites, increasing crown fire risk and associated loss of culturally significant scar / birthing trees. First Nations people would like to be involved in a biochar project, create employment and have opportunities in the wider value-chain.

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

ces with research entities, invest in validating trial work on novel approaches.A). Drive innovation: Support Production systems / Landcare groups to support the co-design of certain projects with stakeholders e.g. Cluster groups with Industry, primary producers, subject matter experts, peak organisations, institutions, government agencies etc. for demonstration sites / pilot projects, research and innovation. 2,500 products can be made out of biochar and 25,000 products out of Industrial Hemp. Opportunities are endless, however we need linkage support to CRC's, and other stakeholders. It can't be resourced via in-kind. B). Build capacity: 1. Devolved Funding for Community Capacity Building: • Build upon the success of previous CMA devolved funding initiatives. • Allocate funds to community-embedded roles (e.g., Local Landcare Coordinators) to provide independent information based on community needs analysis they do with their networks. • Propose an allocation of \$150,000 per year per catchment for workshops with subject matter experts to be split between Landcare / production systems groups etc. 2. Funding for Vision Statements: • Allocate funds for community groups incl. First Nations to develop vision statements for natural assets, rivers, creeks, and sub-catchments. • Use these vision statements to inform future

natural capital investments. • Discuss / co-design opportunities for landholders, First Nations People, and community groups. • This approach encourages / incentivises environmental water delivery, collective actions, and diversification of income streams. 3. Regional Drought Resilience Plan Officer: • Establish a Regional Drought Resilience Plan Officer position (housed in entities like Landcare or Production Systems Groups). Maybe the role could be titled Community Wealth Building Officer/ Information Exchange Broker. • Coordinate actions, monitoring, evaluation, and learning (MEL) between councils and other stakeholders. • Serve as a conduit for information exchange between various entities and contribute to regional plan objectives. 4. Support for Catalytic Activities and Cluster Groups: • Provide increased funding for catalytic activities, cluster group support, and project planning (to help projects / stakeholders survive the 'valley of death'). • Allocate funds for pre-feasibility studies, master plans, business cases, and collaborative business structures for transformational change activities as recommended in the Productivity Commission report on drought hubs (e.g. biochar, circular economy projects, local value add manufacturing to reduce scope 3 emissions). • Encourage community investment, legal support for place-based capital raising, and community wealth building outcomes. 5. Attendance at Government / CRC Stakeholder Meetings: • Fund attendance at key government stakeholder meetings, such as Environmental Water Reference Group Meetings and relevant CRCs. • Enable community representation and voice in research needs. • Consider providing fees for attending Hub meetings to strike a balance between outreach and cost considerations. • Contribute \$10K per year for entities to be involved in CRC's as they already contribute considerable in-kind labour and local IP. 6. Community Groups as Information Conduits: • Allocate funds to community groups to act as conduits of information for agencies. • Acknowledge the importance of financial support for collaborative partners to prevent over-reliance on in-kind contributions. c). Ensure the system enables emissions reductions. Invest in having checks and balances to validate emissions reduction for novel approaches.

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?

Support biochar production and value adding manufacturing in regional communities (which will reduce scope 3 emissions). Joseph S et al 2021 reports from a metanalysis that on average biochars increase P availability by 4.6, decrease plant tissue concentration of heavy metals by 17% - 39%, build soil organic carbon by 3.8%, and reduce non-CO2 greenhouse gas emissions from soil by 12%-50%. Ave. crop yields increase by 10% - 42%. Crop yields increase strongly if site-specific soil constraints and nutrient and water limitations are mitigated by appropriate biochar formulations. Biochars can be tailored to address site constraints through feedstock selection, by modifying pyrolysis conditions, through pre or post production treatments, or co-application with organic or mineral fertilisers. We used wisely, biochar mitigates climate change and supports food security and the circular economy.

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?

The AG has been investing in rapid methods such as soil carbon to reduce costs. I believe Landcare groups and production system groups could conduct roles for independent verification activities, which would support labour and build capacity in local communities.

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?

I think land managers need independent information from demonstration sites for projects that have gone to environmental markets.

[REDACTED] We see our role is co-designing what communities would like to see as a vision in their landscape, including First Nations people (totemic species protection for example) and aggregating a contiguous wildlife corridor with collective interventionist management outcomes for biodiversity protection (e.g. feral animal control), carbon plantings, strategic grazing management etc. We would like to employ First Nations people to do on ground assessments and verification activities for environmental market projects. We have been trying to get funding to hold workshops to deliver integrated pest management control programs and build skills and knowledge however funding has not been available.

Is your response confidential?

No

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

Yes

Please de-identify my response

Yes

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

Confirm that you have read and understand this declaration.

Yes
