MEAT & LIVESTOCK AUSTRALIA

Final report

Environmental credentials for Australian Grassfed Beef: co-design of the Tree Cover theme

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Abstract

The 'Environmental credentials for Australian grass-fed beef' project led by a consortium of Meat and Livestock Australia (MLA), the University of Queensland (UQ) and WWF Australia (WWF-A) aims to support landholders seeking to demonstrate their environmental credentials to market, and to improve sustainability outcomes.

This project engaged with beef producers and industry representatives to consider five themes: (1) biodiversity stewardship (2) tree cover (3) groundcover (4) carbon balance, and (5) drought resilience.

WWF-Australia partnered with the Australian National University (ANU), given their experience working with the Australian Government to design the Australian Farm Biodiversity Certification scheme. The partnership ran a co-design process for biodiversity stewardship, tree cover and ground cover. This involved bringing together representatives from the beef industry to agree on recommendations for a 'design brief' intended to inform the next stage of the project, including development of an online sustainability platform and online learning resources. The tree cover co-design group agreed on the definition of 'tree cover', indicators and measures, benchmarks, and gaps in learning resources. The co-design group also identified overarching 'design principles' to guide the development of project outputs relevant to the tree cover theme.

Executive summary

Background

The 'Environmental Credentials for Australian Grass-fed beef' project ('the Project') recognises a growing consumer and market demand for sustainably produced beef, and the need for beef producers to be able to demonstrate their 'environmental credentials' in a consistent and efficient manner. This project aims to provide beef producers with tools that will assist them in doing this.

There are two main stages to this project:

(1) Engagement with beef industry representatives and seeking their input into the design of an online sustainability platform and learning resources for beef producers around five key sustainability themes: (1) biodiversity stewardship, (2) tree cover, (3) ground cover, (4) drought resilience, and (5) carbon balance. This was done via a 'co-design' process with five co-design groups agreeing on a 'design brief' for each of the five themes. This process ran from November 2021-May 2022.
(2) The design and development of the online sustainability platform and online resources, and the potential development of 'environmental credentials' based around the sustainability themes, informed by the design briefs agreed on during the co-design process. The online sustainability platform and learning resources are due to be piloted and completed by December 2023.

Objectives

The objectives for the 'Tree Cover' theme were to:

1. Develop the design brief for the Tree Cover Theme for Environmental Credentials for Australian Beef (Smart Farms) project ready for translation into an on-line platform. Theme designs will include indicators, measuring tools/approaches, benchmarks and learning resources. The platform design must be suitable for producer self-assessment of environmental performance.
2. Support the environmental credentials platform developer in integrating the tree cover theme into the on-line platform.

Methodology

The Tree Cover theme co-design process brought together a number of key industry representatives (producers and supply chain representatives) from a MLA selection process. The members of the co-design team discussed and agreed on the definition of this theme, appropriate indicators and measures, benchmarks, gaps in learning resources and key design principles. The co-design group met six times on-line, and once as a larger group including co-design groups across all themes. Once the co-design group had agreed on a draft design brief, it sought feedback from a number of external reviewers and incorporated their feedback into the final brief.

Results/key findings

The Tree Cover theme co-design group successfully agreed on a design brief which will inform the second stage of the Project: the development of the proposed online sustainability platform and learning resources.

Benefits to industry

Overall Project benefits to industry are unclear as the second stage of the Project is yet to be complete, however during this initial co-design process, industry representatives had the opportunity to engage and influence final project outcomes. Potential benefits to industry include increased awareness of the importance of tree cover, and emerging market opportunities for beef producers.

Future research and recommendations

Potential areas of further R&D:

- Spot verification of a sample of properties could be done to determine levels of accuracy of the remote sensing information and to identify any issues with the platform for amendment. For example, some properties using the platform will be well-surveyed for their vegetation and biodiversity and could be used as examples to calibrate data accuracy.
- Further as remote sensing information improves, the maintenance contractor for the platform should ensure that this information is updated to ensure it is using the most up to date information.
- Industry representatives involved in the co-design expressed an interest in nature-based markets and opportunities for participation in these markets. Opportunities for producers or supply chain stakeholders, using the platform to meet the needs of emerging nature-based markets and other market requirements, such as Taskforce on Nature-related Financial Disclosures (TFND) and Science Based Targets of Nature (SBTN) should be reviewed.
- The co-design groups raised a request for a customisable dashboard design where producers can create an interface useful for them.
- Another idea was whether producers would be able to connect their platform data with other financial, stock or farm management systems to streamline data transfer and minimise data entry requirements. It was recognised there may be software compatibility issues but considered it might be useful for integrated decision-making.
- Given concerns discussed about the accuracy of remote sensing data, the co-design groups suggested the need for feedback mechanisms, incorporating the capability for user input of biophysical data, alongside the primary reliance on remote sensing data. This feature will be necessary when remote sensing cannot cover a specific indicator or measure, or when users believe the remote sensed data is incorrect.

Adoption:

- The platform will be promoted through communication and dissemination among the Australian beef industry, including grass-fed beef producers and wider networks. This will include engagement with various supply chain stakeholders to ensure they have a strong understanding of the platform and its capability to drive adoption. As with adoption of any

new tool, there will need to be capacity building for users and end-users of the tool to understand it and integrate it into their production or supply chain businesses as well as NRM consultants and advisers.

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1. Background

In 2020, under its 'Smart Farming Partnerships Program', the Australian Government funded the 'verifiable sustainability beef credentials and practice change modules' project. This project, which has become known as the 'Environmental Credentials for Australian Grass-fed beef project' ('the Project') is led by a consortium between Meat & Livestock Australia (MLA), the University of Queensland (UQ) and WWF Australia (WWF-A). This project identified a growing demand from the market for sustainable beef products, and tools that enable beef producers to demonstrate their environmental performance in a consistent and efficient manner. The aim of this project was to develop tools for beef producers to enable them to demonstrate their 'environmental credentials' to market.

This project has two key stages:

1. Engagement with beef industry representatives and seeking their input into the design of an online sustainability platform and learning resources for beef producers around five key sustainability themes:
    1. biodiversity stewardship
    2. tree cover
    3. ground cover
    4. drought resilience, and
    5. carbon balance.

    This was done via a 'co-design' process with five co-design groups, one per theme, agreeing on a 'design brief' for each of the five themes. This process ran from November 2021-May 2022.

2. The design and development of the online sustainability platform and online resources, and the potential development of 'environmental credentials' based around the sustainability themes, informed by the design briefs agreed on during the co-design process. The online sustainability platform and learning resources are due to be piloted and completed by December 2023.

The Australian National University (ANU) was invited by WWF Australia (with the support of the consortium) to partner with them as subject matter experts in leading the co-design process (Stage 1 of the Project) for three of the five project 'sustainability themes': biodiversity stewardship, tree cover and ground cover. ANU's involvement in the Project recognised the linkages between the Project and the Australian National University's work under the Australian Government's Agriculture Biodiversity Stewardship Package, particularly the proposed Australian Farm Biodiversity Certification Scheme.

At its inception, the Project recognised that customers and other industry stakeholders are increasingly looking for evidence of sustainable production practices. The Project aimed to enable beef producers to take advantage of emerging opportunities presented by markets and supply chains through the provision of tools and resources to support their efforts. Anticipated final project

outcomes include an online sustainability platform which includes learning resources, property-level data and remote sensing information and a questionnaire to inform whether the producer has met the requirements for a biodiversity and/or carbon credential across three tiers: (1) aware; (2) action; and (3) advance. Initially, with regard to tree cover, this will be covered within the biodiversity theme using CIBO labs vegetation extents benchmarking. When tools used for the Australian Farm Biodiversity Scheme are able to be built into the platform, such as the vegetation condition score function, MLA will ensure this forms a part of future updates. When additional remote sensing or other technology enables cost-effective quantification tree cover indicators, the platform will also aim to incorporate these as part of its ongoing maintenance and updating. It will be voluntary whether the producer uses the information to inform their own decision-making or, if they have achieved compliance with a credential, they may wish to demonstrate this compliance to market.

Using a 'co-design' process that directly engaged with lead grass-fed beef producers and supply chain representatives, each theme developed design briefs that are intended to inform the development of the online 'sustainability platform' and 'learning resources' that will support landholders seeking to demonstrate their environmental credentials.

This report outlines the work undertaken by WWF and the ANU as theme leads for the co-design process for the Tree Cover theme between November 2021 and June 2023.

2. Objectives

Table 1

Objective	**Status**
1. Develop the design brief for the Tree Cover Theme for Environmental Credentials for Australian Beef (Smart Farms) project ready for translation into an on-line platform. Theme designs will include indicators, measuring tools/approaches, benchmarks and learning resources. The platform design must be suitable for producer self-assessment of environmental performance. The process to achieve this will include: a) Coordinate and manage up to five co-design sessions with beef producers and relevant industry and other stakeholders to identify the scope and design of the solution for the Tree Cover Theme. b) Select, collate, review and update relevant Tree Cover theme materials for inclusion in the online platform, and incorporating co-design working groups and technical peer review feedback into the platform design brief for the Tree Cover Theme. c) Produce a design brief for the technical builder of the online platform, from the co-design process. Design brief to cover (minimum):	Achieved. A design brief for the Tree Cover Theme, including indicators, measures, benchmarks and recommended learning resources was developed in consultation with members of the Tree Cover co-design group. Six meetings were held with the co-design group which focussed on topics such as definition of the theme, suitable indicators and measures, and gaps in learning resources. A further meeting was held that included members of the five co-design groups. A peer review process of the design brief was undertaken, and feedback was incorporated into the final design brief. The final design brief is provided at Attachment 1.

i. Technical brief including any remote sensing or decision support component requirements ii. Brief for online learning.	
2. Support the environmental credentials platform developer in integrating the tree cover theme into the on-line platform.	Achieved. Following delivery of the design brief, the project team (MLA, UQ, WWF-A, and ANU) recognised there was a need to document how the themes were interrelated to inform the platform build team. A matrix of interdependencies and common design principles across the themes were developed to inform the platform design. MLA worked directly with the platform designers, providing updates to the partners on platform design via management and theme leads meetings.

3. Methodology

3.1 Development of a background material to inform the co-design process

The first step in the co-design process was the drafting of a Tree Cover Theme Co-design Background paper (ANU). This paper outlined key elements such as aim, scope, key design issues, and possible approaches to the development of this theme. It also considered the importance of benchmarking, balancing cost and accuracy and compatibility of this project with other initiatives. This background paper informed the development of the 'Environmental Credentials for Australian Beef: Background scoping paper for the tree cover, groundcover and biodiversity stewardship themes' (WWF, September 2021). This background scoping paper was provided to the co-design group for their information and consideration prior to the first co-design group meeting.

UQ also completed a 'beef industry business scan' which documented the 'sustainability context' for the Project and the key findings from interviews held with participants in the beef value chain. This material was also provided to co-design participants prior to their first meeting.

Before each meeting, the co-design group was provided with background briefing material in various forms (for example via video, slides, background papers etc). This information formed the basis of discussion in the co-design meetings.

3.2 Codesign

3.2.1 Selection of co-design participants

Codesign groups were formed using a selection process managed by MLA. An expression of interest process was widely promoted throughout the Australian beef industry, offering remuneration according to the MLA sitting fee policy. The application process closed in August 2021. 110 expressions of interest were received from producers from all beef producing regions of Australia. Applicants were asked to nominate for the themes matching their experience and interests. All applications were considered, and applicants were ranked by a panel made up of all theme leads and MLA staff, according to set criteria. Attention was given to ensuring regional representation, age, gender and industry diversity was achieved through the selection process. The tree cover theme co-design members were:

1. Emily Webb Ware (Co-owner, Yirraba Pastoral)
2. Jane Carney (Owner, Cienega Pty Ltd)
3. Veronica Nix (Partner, DE King and VJ Nix)
4. Tim Eyes (Director, The Food Farm)
5. Christopher Bur (Director, Quentic/Zeebra Plains)
6. Melinee Leather (Manager, Barfield Station)
7. Mark Wootton (Principal/Manager, Jigsaw Farms)
8. Steven Scott (Owner, Scotts Angus)
9. Mark Inglis (JBS)
10. Jeffrey John (Partner, Summertime Farm)
11. David Hill (Partner, Clarkwood)

3.2.2 The co-design process

Six on-line meetings of the tree cover co-design group were held between November 2021 and May 2022. These meetings were led by either WWF or ANU, who were also responsible for preparing and disseminating background material prior to each meeting. Prior to each co-design meeting, a 'planning' meeting was held between WWF, UQ, MLA (for early meetings) and John James, the co-design meetings facilitator. The on-line format of these meetings had some challenges (for example sometimes participants had connectivity issues or availability constraints), but overall it was a very successful, efficient and cost effective way of bringing together a diversity of participants from across Australia.

The focus of each of these meetings is outlined briefly below:

Meeting 1: An introductory meeting providing participants with an overview of the environmental credentials for Australian grass-fed beef project, including a presentation from MLA and WWF. There was a discussion about the role of the working group and next steps.

Meeting 2: Co-design participants were provided with background scoping material prepared by WWF and ANU and the results of a business scan completed by UQ. Focus of this meeting was on discussing and agreeing the definition of 'tree cover' and the scope of the tree cover theme. Key design elements of the theme (for example, outcome-based, activity-based, process-based or a hybrid approach) were also discussed, along with key linkages to other relevant initiatives such as the System of Environmental-Economic Accounting (SEEA), the Australian Farm Biodiversity

Certification Scheme, Accounting for Nature, Land to Market Australia and Land Management Alliance.

Meeting 3: The focus of meeting 3 was to discuss appropriate indicators and measures, including what is possible with available data including remote sensing. The links between tree cover and the biodiversity stewardship and carbon balance themes were key discussion points in this meeting.

Meeting 4: In this meeting, the ANU team provided an overview of the proposed Australian Farm Biodiversity Certification Scheme and the biodiversity condition scoring approach that has been developed by ANU as part of that proposed Scheme. The working group was provided with information about the certification process, thresholds for reaching certification classes and an overview of the proposed vegetation condition for biodiversity scoring approach that the Scheme will be using to compare properties with relevant regional benchmarks. The group also discussed: 'what does success look like?'

Meeting 5: discussion focussed on a potential 'workflow' for an online sustainability tool to support the environmental credentials, linked to this was a discussion around existing data and platforms, including the potential to link to and use the National Stewardship Trading Platform (which will also be used to conduct assessments under the Australians Farm Biodiversity Certification Scheme with this functionality). The topic of learning resources was also introduced at this meeting,

Meeting 6: this meeting focused on confirming with working group members all agreed elements of the design brief: definition and scope, measures and indicators, existing data, benchmarks and learning resources. For learning resources, working group participants reviewed a list of existing resources and commented on their usefulness, and identified the need for synthesis of existing material, or any gaps in knowledge.

Meeting outcomes were recorded in a 'rolling report' produced at the end of each meeting.

A final 'webinar' was held in July 2022, involving co-design participants across all five Project themes to discuss final outcomes from the co-design process.

Key features of the co-design approach used in the Project included:

- A 'flipped learning' approach, where participants were provided with material ahead of the meeting to inform and prompt discussion. This approach meant that more time was available in meetings for interactive discussion.
- The use of polls and breakout rooms to receive rapid feedback from participants, or to allow certain topics to be discussed in more detail with a smaller group.
- Each meeting built on discussions and agreement at previous meetings.
- Time and effort were committed to building the group dynamic and commitment to the task.

3.3 Design brief process

A design brief for the tree cover theme was prepared by ANU and WWF on behalf of the co-design group. This brief was based on the outcomes of the co-design process. The draft design brief was circulated to co-design participants and updated to include feedback from them. A peer review process was also undertaken, with feedback received from a number of external reviewers also incorporated into the final version of the design brief. This design brief was then submitted to MLA who are leading Stage 2 of the Project (online sustainability platform and learning resource development).

4. Results

4.1 Design brief overview

The tree cover theme co-design group highlighted the following 'design principles' in their discussions:

1. Avoid duplication of existing initiatives and efforts. Particularly important to link to the Australian Farm Biodiversity Certification Scheme and use the National Stewardship Trading Platform as a 'one-stop-shop'. Also important to link to (or give consideration to) other initiatives such as the Australian Beef Sustainability Framework, Qld Statewide Landcover and Trees Study (SLATS), and national greenhouse gas accounts.
2. The relationship between the Australian Farm Biodiversity Certification Scheme and the Environmental Credentials for Australian Grass-fed Beef project needs to be clearly communicated in a manner that allows producers and the market to clearly understand where they are linked, where they differ, and the opportunities and 'rewards' offered under each initiative.
3. It is essential that an environmental credential for tree cover under this project does not undermine the integrity of the Australian Farm Biodiversity Certification Scheme, or limit producer opportunities for promoting their efforts.
4. Transparency is essential and the data and process used to calculate measures must be made available to provide market confidence.
5. Important that the online sustainability tool is free to access and ideally avoids having sign-in requirements.
6. Simple, easy to use and intuitive.
7. Provides a 'feedback mechanism' to allow producers to correct or provide feedback on remote sensing data (concerns were raised about the accuracy of remote-sensing data and relying solely on desktop assessments).
8. Important to clearly communicate the limitations associated with relying on a desktop/remote assessments of tree cover.
9. Is there a way to link the platform with the economics/value benefit for producers to get those less engaged interested in the platform e.g. producers able to download their data to use for other financial systems, an overall metric such as x transactions equivalent to $y from participating on the platform.
10. Landholders must be adequately informed 'up-front' about any privacy issues related to data use and sharing.
11. Consideration will need to be given to the challenge of acknowledging past continuous improvement as well as a commitment to future improvement from a low base.

Key elements of the design brief are the definition, purpose and scope of the theme, indicators and measures and practices. These are summarised briefly below.

The co-design group agreed to the following definition of tree cover:

Definition: ***Tree cover means areas containing forests or sparse woody vegetation, including revegetation. Forests are defined as areas with woody vegetation that is at least 2 metres tall***

with crown cover of at least 20% cover over 0.2ha or more, and sparse woody vegetation that has 5-20% cover and is at least 2m tall.

The co-design group made the following additional points in relation to the definition of 'tree cover' for the purposes of this theme:

- This definition aligns with the national carbon accounting system categories.
- The importance of paddock trees is noted (0.2 ha requirements omit them), recommend options for self-reporting paddock trees of significance, or other appropriate means of capturing/recording these.
- This definition is to be supported by further information/learning resources.

The agreed purpose of this theme is to enable producers to demonstrate their environmental performance in relation to forest and woodland stewardship on-farm.

As stated in the design brief, the scope of a potential 'credential' for tree cover includes:

- Assessment of the tree cover credential under the Environmental Credentials for Australian Grass-fed Beef project is intended to be cost-effective and based on remote sensing data rather than on-farm surveys, audits and measurements.
- Trees, woodlands and forests in Australian grazing systems provide important services to the Australian beef industry. These contributions include productivity, profitability, and animal welfare benefits including the provision of shade and shelter for stock; improving soil structure; moisture and quality; increasing nutrient cycling; improving rainfall use efficiency and improving waterways and water quality. Tree cover also plays important roles for biodiversity and the management of tree cover will be an important consideration for the beef industry's 2030 carbon neutral commitment.
- There are strong linkages, in terms of both concepts and data, between the biodiversity stewardship theme and other themes under the Environmental Credentials for Australian Grass-fed Beef project, **particularly the biodiversity stewardship and carbon balance themes**.
- Learning resources for this theme are intended to support producers seeking to retain and improve on-farm tree cover. They are also intended to raise awareness about the benefits of tree cover to beef production. They will link to and use existing learning resources and information networks, and synthesise existing resources where required to improve producer access to information.

It was agreed by the co-design group that the two **indicators** for tree cover should be:

1. Woody vegetation cover by class
2. Change in tree cover over time

The agreed **measures** were:

1. Extent (ha) of each class of tree cover (area-based measures)
2. Percentage (%) change in tree cover (change +/- measure)
3. Area cleared or regenerated by type.

In relation to these indicators and measures, the tree cover co-design group noted the following:

- The online sustainability tool should include appropriate caveats specifically highlighting limitations associated with relying solely on remote sensing data (without ground truthing or verification) for tree cover assessments. For example, the tool will not be able to determine quality of tree cover, diversity and type of species. It is recommended that the online tool provides a 'feedback loop' to allow producers to upload verification, or corrections where required. This would improve producer and market confidence in the process.
- There are challenges associated with applying national measures for tree cover due to regional variability. For this reason, regional benchmarking is recommended (similar to the approach proposed under the Australian Farm Biodiversity Certification Scheme that align with the proposed regional benchmarks for the Biodiversity Stewardship theme) to ensure that considerable regional difference in tree cover are captured. Such benchmarking will be comparing local agricultural land with the property ie national parks, state forests or urban areas are excluded from such comparisons.
- Any property-level changes in tree cover over time need to be placed in the context of its time and place with respect to climate, ecology and other relevant factors.
- It is recommended that the approach undertaken to measure and report on tree cover over time is aligned with the methodology used under the Australian Farm Biodiversity Certification Scheme which reports vegetation condition at a property-level relative to the broader region.
- The National Stewardship Trading Platform https://agsteward.com.au has the capabilities to undertake these measurements and it is recommended that the Environmental Credentials for Australian Grass-fed Beef online sustainability tool links to and uses this capability rather than duplicating this Platform.
- Important that tree cover classes are appropriately defined and have a degree of flexibility recognising that classification may change over time.
- Important to allow for essential management activities such as fire and erosion management.

Although **practices** for tree cover management were not explicitly covered in co-design meetings, information on practices were required in the design brief and a number of widely accepted tree cover practices were therefore included in the brief.

The co-design group also recommended the following benchmark for tree cover:

1. Regional benchmarks of average tree cover by vegetation class in each region, similar to the approach used in the Australian Farm Biodiversity Certification Scheme.

A final design brief is provided in full at Appendix 1.

5. Conclusion

The codesign process was an effective way of engaging with, and capturing feedback and input from, key industry representatives including beef producers. Although there were some limitations in a fully online approach for co-design meetings, these were insignificant in comparison to the benefits. The online format enabled broad regional representation and for generally time-poor producers and stakeholders to more easily engage without travelling and at a relatively low cost.

The flipped learning approach used in the co-design process meant that participants had the time to read and consider material prepared and circulated prior to a meeting allowing meeting time to be largely allocated to discussion and ensuring that all participants had the opportunity to provide input. Co-design participants were highly engaged and interested in the project and offered invaluable input and expertise. By the end of the co-design process, participants had a strong sense of ownership in the process and the anticipated final outputs, with all agreeing to the final design brief. They also appreciated the opportunity to learn from others and share ideas.

The co-design group were strongly supportive of the opportunity to exploit linkages with the proposed Australian Farm Biodiversity Certification Scheme, and the proposed vegetation condition for biodiversity scoring approach that had been developed by ANU under that scheme.

One key challenge associated with the approach taken in the Project (with co-design as a first discrete stage in the Project) is the length of time between the co-design process ending (May 2022), and the final anticipated output (December 2023). There is also a lack of overlap between Stage 1 co-design participants and Stage 2, those who are closely involved with the platform design process (which is being led by MLA directly with the platform team). Both factors present risk of disconnect between the co-design process and platform development. While the co-design participants have been invited to join the pilot, responses to date have been relatively low. The consortium has discussed the need to reconnect with co-design participants closer to the pilot launch to encourage their participation to seek their feedback on the platform design.

While the co-design stage of the process is considered to have been very successful in engaging with key industry representatives, and developing a design brief, it is not yet possible to comment on how successfully the co-design process has been in informing and influencing the final project outcome.

6. Key findings

- A platform design brief for the tree cover theme was successfully developed. The design required inclusion of a definition, measures and indicators, benchmarks, gaps in learning resources.
- An environmental credential for tree cover should be consistent with, and link to (where possible) the proposed Australian Biodiversity Certification Scheme's vegetation condition for biodiversity scoring method.
- Beef producers participating in co-design groups were highly engaged in the process and had strong ownership in potential project outcomes.
- 'Design principles' that emerged from discussions with the tree cover theme working group include the need for an online sustainability tool that is intuitive, easy to use and open access, avoids duplication of effort and builds on (and/or links to) existing initiatives, and addresses privacy and data accuracy concerns. Also noted was the importance of appropriate caveats signalling the limitations associated with relying solely on remote/desktop assessments for tree cover.
- There is a risk of 'disconnect' between Stage 1 and Stage 2 of the Project, which may limit the value of the work undertaken in Stage 1.

7. Benefits to industry

Any work that raises awareness of the value of retaining or improving tree cover is of benefit to the grass-fed beef industry. This Project is not yet complete, so it is difficult to quantify or fully anticipate industry benefit. However, given the invaluable input from key representatives from the beef industry, and the high level of interest from the market in sustainable beef production, it is anticipated that tools that enable to beef producers to demonstrate their environmental performance, including retention and improvement in tree cover, will have significant industry benefit. This benefit will be greater if final Project outcomes are consistent with, and linked to, other complementary initiatives.

8. Future research and recommendations

Potential areas of further R&D:

- Spot verification of a sample size of properties could be done to determine levels of accuracy of the remote sensing information and to identify any issues with the platform for amendment. For example, some properties using the platform will be well-surveyed for their vegetation and biodiversity and could be used as examples to calibrate data accuracy.
- Further as remote sensing information improves, the maintenance contractor for the platform should ensure that this information is updated to ensure it is using the most up to date information.
- Industry representatives involved in the co-design expressed an interest in nature-based markets and opportunities for participation in these markets. Opportunities for producers or supply chain stakeholders, using the platform to meet the needs of emerging nature-based markets and other market requirements, such as Taskforce on Nature-related Financial Disclosures (TFND) and Science Based Targets of Nature (SBTN) should be reviewed.
- The co-design groups raised a request for a customisable dashboard design where producers can create an interface useful for them.
- Another idea was whether producers would be able to connect their platform data with other financial, stock or farm management systems to streamline data transfer and minimise data entry requirements. It was recognised there may be software compatibility issues but considered it might be useful for integrated decision-making.
- Given concerns discussed about the accuracy of remote sensing data, the co-design groups suggested the need for feedback mechanisms, incorporating the capability for user input of biophysical data, alongside the primary reliance on remote sensing data. This feature will be necessary when remote sensing cannot cover a specific indicator or measure, or when users believe the remote sensed data is incorrect.

Adoption

- The platform will be promoted through communication and dissemination among the Australian beef industry, including grass-fed beef producers and wider networks. This will include engagement with various supply chain stakeholders to ensure they have a strong

understanding of the platform and its capability to drive adoption. As with adoption of any new tool, there will need to be capacity building for users and end-users of the tool to understand it and integrate it into their production or supply chain businesses as well as NRM consultants and advisers.

9. Appendix

Tree cover: final design brief

Environmental Credentials for Australian Grass-fed Beef

Tree Cover working group

Final draft platform design brief June 2022

Background

WWF Australia is the theme lead for the Tree Cover theme. WWF sub-contracted the Australian National University Agricultural Stewardship team (Professor Andrew Macintosh, Professor Don Butler and Marie Waschka) to assist in the role of theme lead; to provide technical advice on this project; and, to build linkages between the environmental credentials for Australian grass-fed beef project and the Australian Farm Biodiversity Certification Scheme.

The working group for this theme was made up of the following members:

Emily Webb Ware (Yirraba Pastoral)
Jane Carney (Cienega Pty Ltd)
Veronica Nix (DE King and VJ Nix)
Tim Eyes (The Food Farm)
Christophe Bur (Quentic/Zeebra Plains)
Melinee Leather (Barfield Station)
Mark Wootton (Jigsaw Farms)
Cindy and Steven Scott (Scotts Angus)
Mark Inglis (JBS)
Jeffrey John (Summertime Farm)
David Hill (former Director, Cattle Council Australia)

As set out in the initial issues scoping paper for this theme (see Appendix A), the purpose of the proposed tree cover credential is to enable producers to demonstrate their environmental performance in relation to forest and woodland stewardship on-farm. One of the key motivations for some producers is to demonstrate their commitment to producing 'deforestation free beef'.

From the outset, it was recognised that the Tree Cover credential has close linkages with other themes, in particular the Biodiversity Stewardship and Carbon Balance themes.

The Tree Cover working group met six times between November 2021 and May 2022. The meetings had the following focus:

Meeting 1: An introductory meeting providing participants with an overview of the environmental credentials for Australian grass-fed beef project, including a presentation from MLA and WWF. There was a discussion about the role of the working group and next steps.

Meeting 2: Focus on discussing and agreeing the definition of 'tree cover' and the scope of the tree cover theme. Key design elements of the theme (for example, outcome-based, activity-based, process-based or a hybrid approach) were also discussed, along with key linkages to other relevant initiatives.

Meeting 3: The focus of meeting 3 was to discuss appropriate indicators and measures, including what is possible with available data including remote sensing. The use of vegetation condition as an indicator of biodiversity was a key discussion point in this meeting.

Meeting 4: In this meeting, the ANU team provided an overview of the Australian Farm Biodiversity Certification Scheme that establishes three classes of certification: green, gold and provisional class. The working group was provided with information about the certification process, thresholds for reaching these classes and an overview of the proposed

vegetation condition and biodiversity condition scoring approach that the Scheme will be using to compare properties with relevant regional benchmarks. The group also discussed: 'what does success look like?'

Meeting 5: discussion focussed on a potential 'workflow' for an online sustainability tool to support the environmental credentials, linked to this was a discussion around existing data and platforms, including the potential to link to and use the National Stewardship Trading Platform (which will also be used to conduct assessments under the Australians Farm Biodiversity Certification Scheme with this functionality due to be available on the site in late 2022). The topic of learning resources was also introduced at this meeting,

Meeting 6: this meeting focused on confirming with working group members all agreed elements of the design brief: definition and scope, measures and indicators, existing data, benchmarks and learning resources. For learning resources, working group participants reviewed a list of existing resources and commented on their usefulness, and identified the need for synthesis of existing material, or any gaps in knowledge.

As part of an 'external review' requirement under this project, two reviewers provided comment on this document, simple changes have been incorporated into this document, and other comments are summarised in a table at Attachment C.

The following table outlines the key elements of a 'design brief' for the development of the online sustainability tool as discussed by the working group members.

Design brief item	**Progress**
Definition and scope	**Definition:** ***Tree cover means areas containing forests or sparse woody vegetation, including revegetation. Forests are defined as areas with woody vegetation that is at least 2 metres tall with crown cover of at least 20% cover over 0.2ha or more, and sparse woody vegetation that has 5-20% cover and is at least 2m tall.*** Notes: • This definition aligns with the national carbon accounting system categories. • The importance of paddock trees is noted (0.2 ha requirements omit them), recommend options for self-reporting paddock trees of significance, or other appropriate means of capturing/recording these.

	• This definition is to be supported by further information/learning resources. **Purpose:** The key purpose of the environmental credential for tree cover is to enable producers to demonstrate their environmental performance in relation to forest and woodland stewardship on-farm. This has the potential to provide multiple benefits to producers, including: • to help producers better understand the correlation between tree cover and productivity • data to support development of carbon balances on farm • support the industry to showcase best practice environmental stewardship • link producers with markets for sustainable beef. NOTE: at this stage the tool does not demonstrate to market the requirements for deforestation free (or d-free) beef. **Scope:** • Assessment of the tree cover credential under the Environmental Credentials for Australian Grass-fed Beef project is intended to be cost-effective and based on remote sensing data rather than on-farm surveys, audits and measurements. • Trees, woodlands and forests in Australian grazing systems provide important services to the Australian beef industry. These contributions include productivity, profitability, and animal welfare benefits including the provision of shade and shelter for stock; improving soil structure; moisture and quality; increasing nutrient cycling; improving rainfall use efficiency and improving waterways and water quality. Tree cover also plays important roles for biodiversity and the management of tree cover will be an important consideration for the beef industry's 2030 carbon neutral commitment. • There are strong linkages, in terms of both concepts and data, between the biodiversity stewardship theme and other themes under the Environmental Credentials for Australian Grass-fed Beef project, **particularly the biodiversity stewardship and carbon balance themes**. • Learning resources for this theme are intended to support producers seeking to retain and improve on-farm tree cover. They are also intended to raise awareness about the benefits of tree cover to beef production. They will link to and use existing learning resources and information networks, and synthesise existing resources where required to improve producer access to information.
Indicators and measures	**Options for beef environmental tree cover credentials** **Indicator** Two key indicators have been identified:

	3. Woody vegetation cover by class 4. Change in tree cover over time **Measures** 4. Extent (ha) of each class of tree cover (area-based measures) 5. Percentage (%) change in tree cover (change +/- measure) 6. Area cleared or regenerated by type. Notes: • The online sustainability tool should include appropriate caveats specifically highlighting limitations associated with relying solely on remote sensing data (without ground truthing or verification) for tree cover assessments. For example, the tool will not be able to determine quality of tree cover, diversity and type of species. It is recommended that the online tool provides a 'feedback loop' to allow producers to upload verification, or corrections where required. This would improve producer and market confidence in the process. • There are challenges associated with applying national measures for tree cover due to regional variability. For this reason, regional benchmarking is recommended (similar to the approach proposed under the Australian Farm Biodiversity Certification Scheme that align with the proposed regional benchmarks for the Biodiversity Stewardship theme) to ensure that considerable regional difference in tree cover are captured. Such benchmarking will be comparing local agricultural land with the property ie national parks, state forests or urban areas are excluded from such comparisons. • Any property-level changes in tree cover over time need to be placed in the context of its time and place with respect to climate, ecology and other relevant factors. • It is recommended that the approach undertaken to measure and report on tree cover over time is aligned with the methodology used under the Australian Farm Biodiversity Certification Scheme which reports vegetation condition at a property-level relative to the broader region. • The National Stewardship Trading Platform https://agsteward.com.au has the capabilities to undertake these measurements and it is recommended that the Environmental Credentials for Australian Grass-fed Beef online sustainability tool links to and uses this capability rather than duplicating this Platform. • Important that tree cover classes are appropriately defined, and have a degree of flexibility recognising that classification may change over time. • Important to allow for essential management activities such as fire and erosion management.

	Data sources: Sources of contextual data (all freely available): - Land parcels - Image base - National vegetation condition data, ideally same as developed for AFBCS (NSW and Victoria have published condition layers, Qld in development but other states do not have plans to develop their own data) - Habitat Condition Assessment System (National product that's an input to the AFBCS condition layer) - Land use - Land cover - The Australian Farm Biodiversity Certification Scheme (AFBCS, recently launched by the Australian Government) will use land use and landcover data to develop assessment units across regions to estimate average condition of those units using HCAS and local knowledge) **Measurement frequency** Recommend an annual check. Land cover data underpinning the Australian Farm Biodiversity Certification Scheme will update annually (Geosciences Australia). Of most importance will be longer term trends. The option of producers providing real time 'feedback' on vegetation condition (including to address inaccuracies in remote sensing data) is important, including potentially providing photos at certain points on a map and having the ability to upload these onto the online sustainability tool. **Data to be shared with the supply chain** Recommend numbers for each measure and the relevant benchmarks, with graphs to show the time-series data and capacity to drill through to maps (a spatial representation of the data that goes into producing those numbers).
Practices	The working group for Tree Cover did not specifically discuss management practices as a topic at its working group meetings, however it is broadly accepted that management practices to support retention and increase in tree cover would likely include practices such as: • Grazing control (wet season spelling from grazing, time-controlled grazing etc) • Native vegetation management and restoration • Threatened species and ecological community management and enhancement

	• Fencing • Pest and weed control • Erosion control **Scenarios** The working group have discussed the potential for the online sustainability tool to run scenarios to inform their on-ground management practices. Whilst the benefits of providing a tool such as this were acknowledged, there were concerns about how difficult it is to 'get this right'. It was recommended that the potential for scenario planning to be included on the online sustainability tool should be explored at a higher level, across all themes, rather than at a thematic level, for it to be most useful to producers and to avoid potentially conflicting scenarios.
Benchmarks	Proposed benchmark: 2. Regional benchmarks of average tree cover by vegetation class in each region, similar to the approach used in the Australian Farm Biodiversity Certification Scheme. There is support for reporting of progress against benchmarks at property, regional and industry scales. Issues of note raised by the working group: - Concerns about accuracy of remote sensing data impacting on regional benchmark and individual property assessments. Recommend 'feedback loop' option on the tool to allow producers to provide feedback/evidence in cases where remote sensing data does not match on-ground data. This would increase producer and market confidence in the assessment process.
Learning resources	**Existing resources**: see Appendix B **Gaps in knowledge or learning opportunities**: - Answering the question: 'How do I do it?'(many resources relate to paddock trees but there are many practices relating to maintaining or improving tree cover, need to highlight these FMNR, planting/multi-species direct seeding, rewilding etc). - Taking a step further from 'Why is it important' to achieving outcomes. - 'Am I planting the right trees?': Local Landcare/NRM groups can help with species selection but need to consider any trade-offs of using species for a carbon benefit compared to biodiversity outcomes. - Directory to 'What I really need to know' - Whole of farm planning tools, and decision support tools including measuring productivity gains linked to tree cover. - How to promote natural regeneration

	- How to link to and utilise natural capital markets and understanding the different opportunities (for example the carbon market) - Having regionally specific case studies and a regional focus - Need to target all producers - Raising awareness of the benefits of retaining or increasing tree cover to support beef production. There are some excellent existing resources that can be used (for example, see Fitzroy Basin Association). - The working group strongly recommended links to regional natural resource management bodies and Landcare groups, who are often producing regionally specific information of most relevance to producers. This relationship will also be important in promoting use of the online sustainability tool. There is also an opportunity to engage with industry learning hubs and Cattle Council of Australia. - Important to communicate links to other initiatives and existing resources rather than duplicating them. Ideally, this online tool would make existing resources easier to access and navigate. - The Woolmark Learning Centre https://www.woolmarklearningcentre.com was given as a good example of website that effectively communicates to, and supports (wool) producers. - Recommend a function on the online sustainability tool that allows users to suggest/recommend resources. - Opportunity to highlight the work of carbon neutral graziers.
Key design principles to increase platform useability	12. Avoid duplication of existing initiatives and efforts. Particularly important to link to the Australian Farm Biodiversity Certification Scheme and use the National Stewardship Trading Platform as a 'one-stop-shop'. Also important to link to (or give consideration to) other initiatives such as the Australian Beef Sustainability Framework, Qld Statewide Landcover and Trees Study (SLATS), and national greenhouse gas accounts. 13. The relationship between the Australian Farm Biodiversity Certification Scheme and the Environmental Credentials for Australian Grass-fed Beef project needs to be clearly communicated in a manner that allows producers and the market to clearly understand where they are linked, where they differ, and the opportunities and 'rewards' offered under each initiative. 14. It is essential that an environmental credential for tree cover under this project does not undermine the integrity of the Australian Farm Biodiversity Certification Scheme, or limit producer opportunities for promoting their efforts. 15. Transparency is essential and the data and process used to calculate measures must be made available to provide market confidence. 16. Important that the online sustainability tool is free to access and ideally avoids having sign-in requirements. 17. Simple, easy to use and intuitive.

	18. Provides a 'feedback mechanism' to allow producers to correct or provide feedback on remote sensing data (concerns were raised about the accuracy of remote-sensing data and relying solely on desktop assessments). 19. Important to clearly communicate the limitations associated with relying on a desktop/remote assessments of tree cover. 20. Is there a way to link the platform with the economics/value benefit for producers to get those less engaged interested in the platform e.g. producers able to download their data to use for other financial systems, an overall metric such as x transactions equivalent to $y from participating on the platform. 21. Landholders must be adequately informed 'up-front' about any privacy issues related to data use and sharing. 22. Consideration will need to be given to the challenge of acknowledging past continuous improvement as well as a commitment to future improvement from a low base.

APPENDIX A: Environmental Credentials for Australian Beef Issues Scoping Paper Tree Cover Theme

Introduction

Australian beef producers pride themselves on their environmental stewardship across a range of sustainable practices but few have secured market recognition or benefit for their environmental performance to date. Some existing customers of beef as well as emerging markets are calling for more information on beef production practices, including the environmental performance of supply chains.

This project will develop an on-line platform with performance indicators, benchmarking and learning resources, that will enable beef producers to self-assess their on-farm management practice against five environmental credentials. (Figure 1).

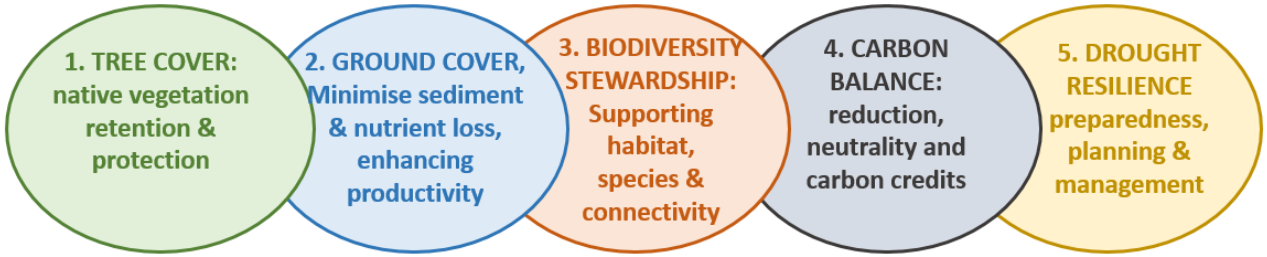


Figure 1 summary of theme areas covered by the demonstrating beef environmental credentials program

Purpose of this paper

The purpose of this background issues scoping paper is to guide the development of the environmental verification and e-learning platform for the tree cover theme. It will ensure that there is no duplication of existing programs or platforms, and that project activities leverage and complement pre-existing programs or platforms and build on what has gone before. It will ensure that the project is efficient, relevant and is targeting areas where there is a need. The paper will be used as the basis for the co-design working groups in designing the verification and learning platforms.

This paper provides an overview of:

- Why tree cover is relevant to the grass-fed beef industry.
- Any national or international commitments or goals that are relevant to tree cover.
- Any existing programs or activities for verifying or measuring tree cover, which are relevant to the Australian beef industry.
- Any existing learning resources or programs for tree cover, which are relevant to the Australian beef industry.
- Aspects of the Tree Cover credential that need to be considered or developed by beef producers and other value chain stakeholders during the co-design process.

Background and context

Trees, woodlands and forests in Australian grazing systems provide important services to the Australian beef industry. These contributions include productivity, profitability and animal welfare benefits including the provision of shade and shelter for stock; improving soil structure, moisture and quality; increasing nutrient cycling; improving rainfall use efficiency and improving waterways and water quality.

Tree cover also plays important roles for biodiversity and landscape function, salinity management, offsetting greenhouse emissions and amenity value. The role of forests and woodlands in climate regulation has also been confirmed, where cooler, wetter conditions are correlated with tree or woody vegetation cover. Retaining trees and regrowth on farm can also contribute to the overall reduction in carbon footprint of beef production through sequestration and storage of carbon in trees. Management of tree cover will be an important consideration for the industry's 2030 carbon neutral commitment.

Around 50% of all Australian farms carry beef cattle, making this the most common and widely dispersed agricultural activity in Australia. Producers running beef cattle manage more than 77% of the total area of agricultural land in Australia. Beef properties are thus a significant part of Australia's overall environmental stewardship by land area.

A Tree Cover credential is proposed to enable beef producers to voluntarily opt-in to be recognised for their tree, forest and woodland stewardship which uses remote sensing (satellite data) to verify their Tree Cover status. Producers will also be able to access resources and guidelines that support their ongoing demonstration of Tree Cover credentials on farm.

Purpose, Definition, Scope of theme

The purpose of the proposed Tree Cover credential is to enable producers to demonstrate their environmental performance in relation to forest and woodland stewardship on-farm. This has the potential to provide multiple benefits to producers, including:

- help producers better understand the correlation between tree cover and productivity
- data to support development of carbon balances on farm

- support the industry to showcase best practice environmental stewardship
- link producers with markets for sustainable beef.

Some customers of Australian beef are committed to sourcing supplies from farms that do not clear vegetation – known as 'deforestation-free' or 'zero deforestation' sourcing. The New York Declaration on Forests' goal to cut global deforestation by half by 2020 has resulted in public commitments from some beef customers. McDonald's, the largest single customer of Australian beef, has committed to sourcing beef that does not contribute to global deforestation by 2020. Fourteen of the industry's largest global retail customers that are members of the Consumer Goods Forum have also made similar public commitments to source products that do not involve land conversion or deforestation. These commitments are generally time-bound, with the majority of commitments listing 2020, 2025 and 2030 as key dates for achieving step-wise milestones for the elimination of land clearing from all their supplies. Examples of companies with such commitments are provided in Attachment 1.

There will be regional differences in Tree Cover on farms. In southern production areas, land that was historically cleared will potentially retain patches of remnant tree and paddock trees, or none at all. Northern production areas are typically landscapes with native vegetation remaining in a natural or semi-natural state with some areas historically cleared, recently cleared or continuing to be managed to control regrowth.

There are potentially strong linkages between the proposed Tree Cover credential and other credentials being developed for the project. Tree Cover is closely related to Biodiversity Stewardship, so it is possible that these two credentials might involve similar indicators, and thus a producer may opt in for both, or they two credentials may be combined into one.

The Carbon Balance theme may use Tree Cover as a measurement of one component of the Carbon stocks on farm that contribute to an overall farm carbon balance. There may also be natural linkages to the proposed Ground Cover and Drought Resilience themes.

See Attachment 1 for a list of public and private sector programs and initiatives with linkages to tree cover

Indicators and measures

Indicators

The Australian Beef Sustainability Framework (ABSF) provides an interactive dashboard for indicators of Tree Cover that are measured remotely using satellite imagery analysis as part of the Balance of Trees and Grass reporting topic. The ABSF indicators for Tree Cover are shown in Table 1.

Table 1. Indicators for Tree Cover used in annual reporting by the Australian Beef Sustainability Framework

Indicator	Description
Forest	woody vegetation with 20% or greater canopy cover potentially reaching greater than 2 metres high and covering more than 0.2 hectares
Sparse woody vegetation	Woody vegetation with a canopy cover between 5 and 19%
Primary forest or woodland	Woody vegetation present in 1988
Secondary forest or woodland	Woody vegetation that has been disturbed at some point in time after 1988

An Expert Working Group (EWG) was engaged by the Sustainability Steering Group of the ABSF to refine and propose indicators for the balance of tree and grass cover. The EWG included experts across the fields of ecology, remote sensing, biodiversity, conservation, animal productivity, and grasslands. The experts provided a diversity of perspectives to refine the indicators. Regional differences in climate and ecosystems presented challenges in how to develop national measures that are also regionally meaningful and able to be used at farm level in the coming years.

Subject to agreement by the Tree Cover Co-design Working Group and the Technical Expert Reference Group, it is proposed that the Tree Cover credential adopt the ABSF indicators for Tree Cover.

See Attachment 3 for other aspects of the development of the Tree Cover credential that will need to be considered by the Co-design Working Group.

Measuring tools &/or measurement

It is proposed that Tree Cover credential is measured using remote sensing data analysis using the indicators developed by the ABSF's Expert Working Group. Four key principles were developed by the ABSF and its Expert Working Group aimed at delivering an operational platform that is practical, credible, regionally relevant and contextual:

1. The method of measurement has to be practical so national data could be collected every year using objective, repeatable and cost-effective approaches;
2. The data being used has to have a high level of integrity to ensure the indicators remained relevant and credible.;
3. It is important that any measures should capture the considerable regional differences in vegetation change, leaving regional reporting an option in the future; and
4. Any changes in vegetation need to be placed in the context of its time and place with respect to climate, ecology and other factors.

The data needs to be sufficiently fine scale to detect changes in tree cover at the property level.

For more information on the ABSF deep dive into the 'Balance of trees and grass', see: https://www.sustainableaustralianbeef.com.au/projects/deep-dives/.

The co-design process will confirm that remote sensing of Tree Cover undertaken for the ABSF reporting is also appropriate for a Tree Cover credential, and will consider the frequency by which farms will be remeasured when producers opt in for this credential.

Verification & producer data management

Satellite imagery analysis is proposed as a means of verifying the extent of tree cover on farm and any changes since the last assessment. In essence, the credential will not require on-ground audits or verification to confirm extent or changes in tree cover. This should enhance the ease of use of the platform by producers and enable producers to track their performance online via the Environmental Credentials for Australian Beef platform.

Farm data will be kept confidential. Only the producers themselves will be able to access their farm's data unless the producers have granted permission for the data to be shared with third parties (industry representatives, consultants or market facing platform users).

Learning resources

The Tree Cover theme will not duplicate or replace existing initiatives or programs that recognise and/or encourage best practice in the beef industry. Rather, it is intended to support and promote those initiatives and programs by establishing a nation-wide credential to demonstrate on farm environmental performance. The platform will provide producers with resources and links to existing initiatives to assist them in achieving their desired level of Tree Cover.

Glossary

Term	Meaning
Indicator	a sign or signal that shows something exists or is true, or that makes something clear eg. the Tree Cover indicator may be 'area of woody vegetation' on farm
Verification	the process of establishing the truth, accuracy, or validity of something eg. satellite imagery analysis can be used to verify Tree Cover

References and Reading

The Balance of Tree and Grass Cover, Deep Dive: the Australian Beef Sustainability Framework
https://www.sustainableaustralianbeef.com.au/projects/deep-dives/

Attachment 1. Companies with commitments to remove vegetation clearing from their beef supply chain

Woolworths is a member of the Consumer Goods Forum (CGF) and signed up to the Deforestation Resolution of 2010 for achieving net zero deforestation by 2020 from sourcing commodities like palm oil, beef, timber, paper and board. Their sustainability plan released in late 2020 includes a commitment to sourcing fresh beef that does not involve tree clearing for production by 2025 (http://crs.woolworthsgroup.com.au/page/planet).

McDonald's have a goal to eliminate deforestation throughout its entire supply chain no later than 2030, with an initial focus of beef, coffee, palm oil, poultry and packaging: (https://corporate.mcdonalds.com/content/dam/gwscorp/scale-for-good/McDonaldsCommitmentOnForests.pdf and https://corporate.mcdonalds.com/content/dam/gwscorp/scale-for-good/McDonaldsCommitmentOnForestsAddendum.pdf).

Tyson Foods are a major supply company for McDonald's and have made a commitment to protect forests in the sourcing of commodities for their markets.

Costco recognizes that beef production can have negative environmental impacts such as being a source of tropical deforestation. Costco remains committed to sourcing Kirkland Signature beef items from sources that are deforestation-free. (https://www.costco.com/sustainability-environment.html)

Whilst **Tesco** does not generally source beef from Australia, it has a global commitment to achieving zero-net deforestation in the sourcing of beef for its own brand products (https://www.tescoplc.com/tackling-deforestation/).

Attachment 2 National, State and Regional initiatives and programs with links to Tree Cover

Australian Government
Australia's Native Vegetation Framework – A National Framework to Guide the Ecologically Sustainable Management of Australia's Native Vegetation – COAG Standing Council on Environment and Water 2012
https://www.environment.gov.au/system/files/resources/76f709dc-ccb3-4645-a18b-063fbbf0a899/files/native-vegetation-framework.pdf

Meat and Livestock Australia
MLA provides some great information on land management online, but the information is not easy to find. The focus is on land condition on the whole, rather than on tree or vegetation retention.

National Landcare
The Landcare Farming Program has developed six key themes for sustaining the future of Australian farming:

- Vegetation management and ecosystem enhancement
- Managing pasture condition/pressure and cover
- Increased biodiversity and landscape stewardship
- Managing carbon/natural capital footprint
- Drought resilience
- People, Planning and Personal Performance

The primary purpose of the Landcare Farming Program themes and principles is to gain alignment across Landcare organisations in Australia. The themes also fit our Demonstrating Beef Sustainability themes, with the exception of People, Planning and Performance, which sits outside of our scope.

NRM Regions Australia
NRM Regions Australia recognises the important role of farmers to the sustainable management of Australia's natural resources. The extent to which NRM regional organisations are involved in delivering agriculture services varies across Australia, and reflects the priorities of jurisdictional governments, but all regional NRM organisations work with farmers to deliver NRM outcomes. Each NRM Region may develop and implement regional initiatives and programs for natural resource management outcomes, and work with farmers of all types to deliver improved productivity and natural resource management outcomes. No specific programs have been identified that address the retention of vegetation, however some regional NRM groups have great resources such as Fitzroy Basin Association's *Trees – the root of productivity*: https://www.fba.org.au/tree-grass-balance-in-the-fitzroy-region/

Cattle Council of Australia (CCA)

CCA supports the Australian Beef Sustainability Framework, the Carbon Neutral 2030 initiative and the Australian Government-funded Australian Farm Biodiversity Certification Scheme trial. 'Cattle Council's Environment and Sustainability Committee looks at how members and producers can best take advantage of new opportunities as governments move the industry towards a more environmentally sustainable future.'
https://www.cattlecouncil.com.au/consultative-committees/environment-and-sustainability-committee

National Farmer's Federation – Biodiversity Stewardship certification
https://nff.org.au/programs/australian-farm-biodiversity-certification-scheme-trial/
The Australian Government has funded the National Farmer's Federation to develop and trial a biodiversity stewardship scheme for Australian farmers. Whilst this initiative is designed to examine biodiversity more broadly, it is understood that developers are looking at measurement methods that do not involve expensive on-ground audits and surveys. This initiative is focused on biodiversity, which is more complex than Tree Cover, but we are keen to align our Biodiversity Stewardship theme as much as possible, and therefore our Tree Cover theme should also complement it as far as possible. We are keen to ensure our Biodiversity Stewardship theme (rather than the Tree Cover theme) aligns completely with this work.

'The package recognises that farmers, as stewards of the environment and as land managers are providing benefits to the wider community. Many small and medium sized farmers would like to do more, and the Australian Government is taking the lead to support further stewardship activities by farmers.
With a wide range of industries, issues and differing priorities, a consultative approach is being adopted in all phases.

The project will run from December 2019 until mid 2022 and will be delivered in 3 Phases:

- Phase 1 will be completed before the end of July 2020 and will be a stocktake existing Australian Agriculture sector BMPs/Sustainability frameworks and a high-level international search for comparative schemes. This will allow Industry and Government to assess areas of commonality across schemes and make recommendations about next steps.

The Australia Farm Institute has been contracted to deliver the Phase 1 report. More information on the AFI consultation process is available here.

- Phase 2 will be completed by the end of June 2021 and will involve the development of a certification/verification scheme as well as detailed consultation across a number of commodities and geographic regions.
- Phase 3 will be completed by mid 2022 and will be an assessment of readiness by farmers to participate in such a scheme, and a small trial of the certification/verification system.

The overall objectives identified for the Australian Farm Biodiversity Certification Scheme Trial include:

- Integrate productivity, sustainability and biodiversity on Australian farms to provide lasting benefits to farmers and the community.
- Ensure Australian farmers can showcase best practice sustainability/biodiversity management of natural resources – and ensure these actions are recognisable by the community and other farmers.'

Agforce's Natural Capital initiative

https://www.agforceqld.org.au/knowledgebase/article/AGF-01028/

Agforce is developing a natural capital framework which would see producers and farmers financially benefitting from the ecosystem services provided on their properties. This initiative will involve research, developing metrics and methodologies for identifying ecosystem services and verifying them, identifying investors in or purchasers of ecosystem services and establishing a framework for trading in ecosystem services.

Queensland

Eucalypt woodlands Regrowth Benefits - Management Guideline

https://www.qld.gov.au/__data/assets/pdf_file/0034/68875/eucalypt-woodlands-management-guideline.pdf

Regrowth Guides

The Queensland Government has produced Regrowth Guides for native vegetation types in Queensland. These guides detail how to support and promote native vegetation on private land for potential carbon sequestration or biodiversity outcomes, and some of the recommended activities potentially align with the Tree Cover credential, including:

- Avoid clearing of live trees and shrubs, except in extremely dense stands
- Encourage the growth and survival of large trees
- Prevent and suppress moderate to high severity fires

Salinity Management Handbook

https://www.publications.qld.gov.au/dataset/5f866f8d-d47a-430e-aa9f-c97f7c4147d7/resource/1ab4a1f6-7465-48a9-9aa5-1251fe3f7502/download/salinity-management-handbook-ch14.pdf

Whilst the focus of this guidance is how to manage salinity in the productive landscape, this report provides advice on strategic locations for retaining trees to minimise salinity occurrences or expansion in brigalow landscapes identified as being at risk of salinity.

Statewide Landcover and Trees Study (SLATS)

https://www.qld.gov.au/environment/land/management/mapping/statewide-monitoring/slats/slats-explained

The Statewide Landcover and Trees Study (SLATS) is a scientific monitoring program undertaken by the Department of Environment and Science's Remote Sensing Centre in partnership with the Queensland Herbarium, Department of Resources and the Joint Remote Sensing Research Program.Satellite imagery and field data are used to monitor and report annual change in woody vegetation in Queensland in support of the *Vegetation Management Act 1999* and to provide data and reporting to inform a range of environment, natural resource and disaster management applications. This includes protection and management of the Great Barrier Reef, State of Environment reporting, biodiversity conservation, and fire management and planning. This Study provides the most detailed information on Tree Cover that is available today, but is only available in Queensland.

New South Wales
No State-wide guidance on vegetation retention has been identified to date.

A Grazier's Guide to the Mallee Country of Western NSW:
https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Land-and-soil/graziers-guide-mallee-country-western-nsw.pdf

Victoria
No State-wide guidance on vegetation retention has been identified to date.

South Australia
No State-wide guidance on vegetation retention has been identified to date.

Tasmania
No State-wide guidance on vegetation retention has been identified to date.

Bush on your Farm:
https://dpipwe.tas.gov.au/Documents/kit1a.pdf

Western Australia
Preventing tree damage by livestock
https://www.agric.wa.gov.au/small-landholders-western-australia/preventing-tree-damage-livestock

Northern Territory and Australian Capital Territory
No Territory-wide guidance on vegetation retention has been identified to date.

Other:
Maintaining and restoring scattered paddock trees:
https://sustainablefarms.org.au/article/maintaining-and-restoring-scattered-paddock-trees

Attachment 3. Aspects of Tree Cover Credential development to be considered by the Co-design Working Group

Aspect	Assumptions to be confirmed	Comments and References
Tree Cover definition and measurement	Utilise the Australian Beef Sustainability Framework definition of Balance of Tree and Grass Cover.	https://www.sustainableaustralianbeef.com.au/deep-dive-into-the-balance-of-tree-and-grass-cover
Measurement of Tree Cover	Using remotely sensed data analysis rather than expensive, time-consuming on-ground audits and measurements	
Frequency of re-measurement of Tree Cover	No assumptions.	To be decided. Consideration to be given to cost of re-measurement and value proposition – once every 12 months?

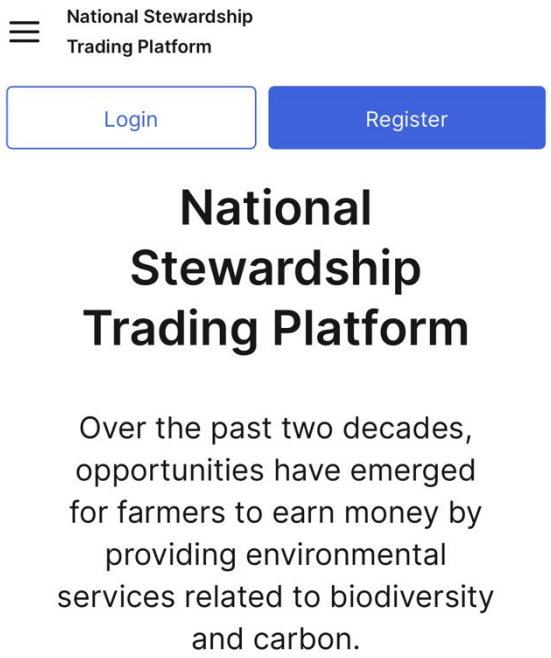
Questions to be considered by Tree Cover Co-design Working Group

- Are the indicators of Tree Cover as developed for the Australian Beef Sustainability Framework acceptable for the Tree Cover credential?
- What frequency of re-measurement should we decide on?
- What current guidance or initiatives do you know of that relate directly to the Tree Cover theme?

Appendix B: Existing Learning Resources relevant to the Tree Cover Theme

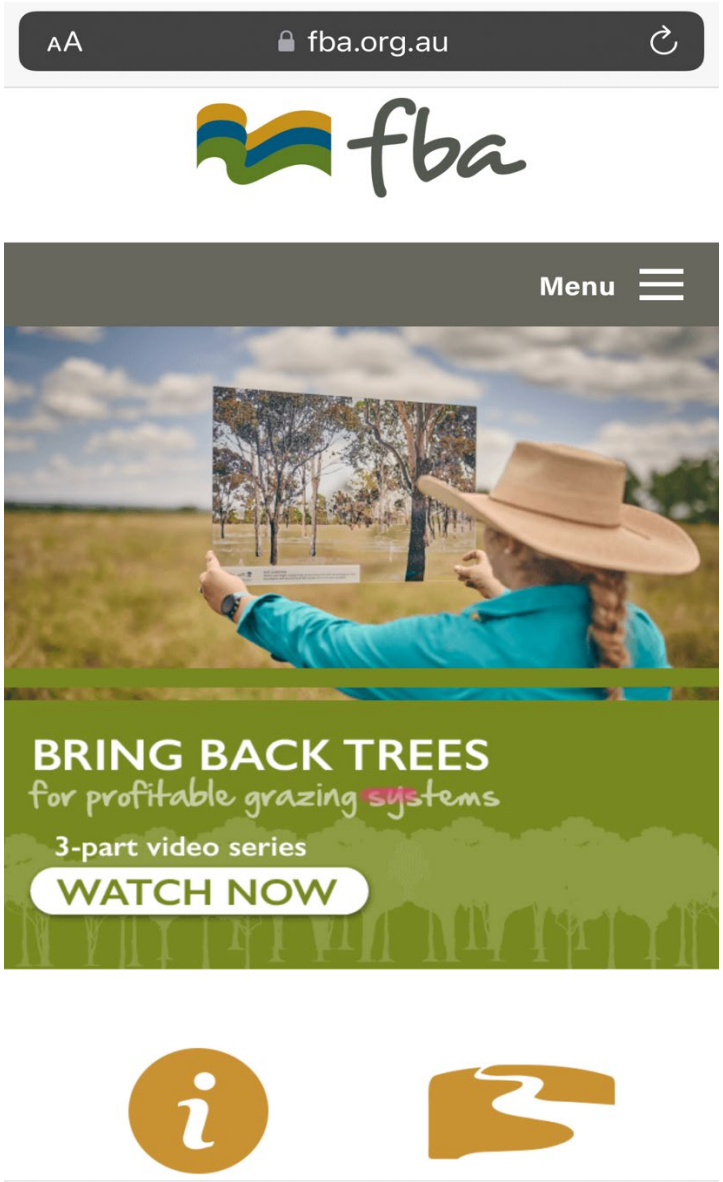
1. National Stewardship Trading Platform (NSTP) is an Australian Government funded online tool that was launched in early 2022.

The NTSP provides a single platform to help farmers participate in emerging environmental markets. The NTSP provides planning tools to help farmers plan and evaluate biodiversity and carbon credits. It connects farmers with potential buyers in biodiversity and carbon services on its Marketplace. It also provides easy-to-use application portals for farmers to apply to the Australian Government Agricultural Biodiversity Stewardship pilot programs. It is designed to be modular, allowing other programs and projects to link to and use it, while allowing them to use their own 'front end' if required. It can be accessed at www.agsteward.com.au.



The NTSP will also provide the basis for assessment of biodiversity friendly farms under the recently launched 'Australian Farm Biodiversity Certification Scheme'(AFBCS). This Scheme has many synergies with the Environmental Credentials for Australian Beef project. Further information about the AFBCS, including a consultation draft of the Standard is available at https://www.awe.gov.au/agriculture-land/farm-food-drought/natural-resources/landcare/sustaining-future-australian-farming/aus-farm-cert-scheme

2. 'Bring back trees for profitable grazing systems' is a new three part video series produced by the Fitzroy Basin Association that 'tells the story of the importance of trees in your paddock, the benefits to soil biodiversity and water systems and the profit increased in grazing enterprises'.



The video series covers the follow topics:

a. Video 1: An introduction to trees in grazing systems
b. Video 2: What is optimal for canopy cover for grazing
c. Video 3: practical experience supports what science has been telling us

An excellent, easily accessible resource targeted at beef producers. Videos can be accessed at https://www.fba.org.au/tree-video-trilogy-turns-the-tables-on-grazing-paradigm/

3. The Fitzroy Basin Association also provides further relevant information resources on their website (https://www.fba.org.au/tree-grass-balance-in-the-fitzroy-region/) including 'Balancing trees and grass for improved grazing conditions in central Queensland' and information sheets such as the following 'Trees: the root of Productivity':

4. Sustainable Australian Beef website supporting the Australian Beef Sustainability Framework has information on the framework's six key priorities, including balance of tree and grass cover in grazing systems. https://www.sustainableaustralianbeef.com.au/the-framework/six-key-priorities/balance-of-tree--grass-cover/

5. 'Benefits of trees for farm productivity' – 4 page information brochure covering topics such as:
    a. Planting and protecting remnant vegetation on the farm
    b. Aside for enhancing the environment what is in it for you and your farm business?
    c. Stock production – increased shelter for stock
    d. Carbon farming potential
    e. Paddock productivity benefits

    Produced by 'Project Platypus: Upper Wimmera Landcare' and can be accessed at https://www.treealliance.com.au/__data/assets/pdf_file/0010/255295/Wimmera_Benefits_of_Trees.pdf

6. MLA have a case study titled ‘Case study: data drives gains in grass and tree cover’ outlines how a cattle company have used online tools and the ABSF to prioritise and invest in sustainability across their beef business. See https://www.mla.com.au/news-and-events/industry-news/case-study-data-drives-gains-in-grass-and-tree-cover/
   Another great MLA resource is ‘Steak and Wood: Demonstrating livestock productivity and environmental service benefits of trees on farm in northern systems’ https://www.mla.com.au/research-and-development/reports/2022/steak-n-wood-demonstrating-livestock-productivity-and-environmental-service-benefits-of-trees-on-farm-in-northern-systems/

7. ‘Protect and restore paddock trees’ – part of the ‘Sustainable Farms’ website which outlines the values of paddock trees and how they can be protected and restored. Available at https://www.sustainablefarms.org.au/on-the-farm/paddock-trees/

Attachment C

Environmental Credentials for Australian Grass-fed Beef: Tree Cover Theme

Reviewer comments

Reviewer	Comment	Action
Steve Banney	We know tree cover can compete with grass and create mustering and other management issues for landholders, so why not address these issues up front?	Noted. This is an issue that should be dealt with in the background/learning resource information included on the online sustainability tool page.
	A lot of producers do not understand what tree cover means. Can this paper show visual diagrams of different tree covers?	Noted. To be included as a gap in learning resources.
	Need to define class when referring to vegetation classes	Noted: to be included in the online sustainability tool, and potentially as a learning resource
	Issue raised regarding data privacy	Noted. Included in the list of design principles.
	An issue was raised about whether the credentials will be aligned with legal requirements for retaining vegetation cover	Noted. The legal requirements regarding vegetation management will vary by state, this is a voluntary industry scheme that will be applied consistently across Australia.
	Won't there be instances where someone will have to verify on the ground, the extent, condition, class and type of the vegetation even it is just part of overall quality control for the remote sensing system?	MLA have made the decision that the Environmental Credentials scheme will be online only, with no on-ground verification. The Australian Farm Biodiversity Certification Scheme will include an on-ground verification process.
	A number of comments were made on the text in the background issues paper included at Appendix A	As the background issues paper included at Appendix A is a historical document intended to inform working group discussions at the beginning of this project, these comments have not been incorporated.
	A comment made in relation to a video on tree cover recently produced by the Fitzroy Basin Association titled 'optimal tree cover for grazing': If we know what is optimal canopy cover for the different land systems, why don't we say so? Producers like simple, clear messages like most of us.	Noted. This message is consistent with feedback from working group producers that is reflected in the design brief.

Reviewer	Comment	Action
Steven Bray	If a rundown property is purchased or through succession and the new owners want to improve that property. They need to be able to engage. Not just be 'knocked out' of the process because their property in currently in poor condition. The process needs to acknowledge past continuous improvement (e.g. ground cover improvement over the last 10 years) but also future improvement from a low base.	Noted: reviewer comment added to design brief
	Should link closely with Australian Beef Sustainability Frameworks, Statewide Landcover and Trees Study (SLATS), and national greenhouse gas accounts.	Noted and reflected in design brief.
	Comment regarding vegetation classes and the potential for these classes to 'move' or be reclassified over time.	Noted. Reflected in design brief.
	Comment around enabling essential management activities and avoiding perverse outcomes (for example necessary works to manage wildfire and erosion)	Noted. Reflected in design brief