



Department of  
Primary Industries and  
Regional Development

Protect  
Grow  
Innovate

# Carbon Farming Plan

## Estimating soil organic carbon sequestration using measurement and models method

## Overview

The Department of Primary Industries and Regional Development (DPIRD) offers this guide to assist landowners develop Carbon Farming Plans.

This guide focuses on the soil carbon farming projects under the ACCU Scheme Estimating soil organic carbon sequestration using measurement and models method.

A Carbon Farming Plan is a comprehensive report that details the information needed to make an informed investment decision and register the project with the Clean Energy Regulator (CER). It includes project design, planning, record-keeping and reporting requirements.

As Carbon Farming Plans contain detailed technical information, the expertise of a Carbon Service Provider is required. Other Service Providers can give supplementary advice if required (i.e. legal, financial, soil analysts, agronomists).

A well-prepared plan can help the landowner determine how carbon farming can fit into existing business operations, the costs and returns, and the management, obligations and risks in developing the project. It should consider the interaction between changing land management practices, soil types, climate and other environmental factors, and broader farm system outcomes.

Service Providers work with the landowner to ensure the obligations, risks, and potential rewards of undertaking a project are understood. As these are important, long term investment decisions, the plan needs to be tailored to individual business needs, properties and circumstances.

Landholders should seek professional advice on the technical and regulatory aspects of a carbon farming project, as well as financial, legal and tax advice. DPIRD has compiled a [Service Provider Directory](#) to help find an expert.

## Instructions for using this guide

This document provides headings and suggested content to develop a Carbon Farming Plan. This enables the landholder to plan and design the project and apply for registration.

Additional information unique to the project can also be included, along with other related information which will assist decision making.

## Resources

- DPIRD: [Key steps for planning a carbon farming project](#)
- CER: [Estimating soil organic carbon sequestration using measurement and models method](#).
- CER: [Understanding your soil carbon project - simple method guide](#)
- CER: [Guidance for meeting the requirements of soil carbon land management strategies for 2021 soil carbon projects](#)

## Carbon Farming Plan – soil carbon project

The information that forms a Carbon Farming Plan is shown below:

Items	Details
<b>Motivations and goals</b>	A description of the business and personal motivations/goals for progressing a carbon farming project
<b>Property overview</b>	Location, soil types, topography, climate
<b>Land use</b>	Current and planned land use and farm production e.g. grains, oil seeds, livestock etc.
<b>Site assessment and mapping</b>	Site assessment and mapping of carbon estimation areas, site plans and configurations for tree plantings (e.g. belt vs block)
<b>Estimated forward abatement</b>	Estimated carbon sequestered over 25 years (modelled in FullCAM or equivalent)
<b>ACCU Scheme method and activities</b>	Eligible method and the property specific activities to be implemented
<b>Budget</b>	Project budget including registration, implementation, long term management, reporting
<b>Cost and revenue forecast</b>	Cost and revenue forecast, profit analysis* +
<b>Co-benefits</b>	Identification of project specific co-benefits
<b>Risk</b>	Project specific risks and mitigation strategies (including permanence plan requirements)
<b>Reporting</b>	Project specific reporting schedule and monitoring
<b>Approvals</b>	Local government development approval requirements (if applicable)
<b>CER registration</b>	Overview of CER registration, reporting and auditing schedule, and permanence requirements
<b>Business planning</b>	Business planning consideration for implementing and managing a carbon farming project e.g., company structure, succession planning, finance.

\* An Australian Financial Services License (AFSL) is required

+ Service Providers should also be a signatory to the Australian Carbon Industry Code of Conduct

## Proponent and Service Provider details

**Proponent:** *Name of the landowner/s.*

**Project name:** *Name of the property/ business enterprise and/or project for registration.*

**Permanence Period:** *25 years or 100 years.*

**Service Provider(s):** *Name, role, business address, phone, email.*

## Executive summary

*The executive summary is written at the completion of the Plan and provides an overview of the farm business and the project to be undertaken.*

*The summary should describe the project location and the high-level objectives that you wish to achieve in running a reforestation project, such as:*

- *Goals for the project (environmental, business, personal)*
- *Overview of the property (location, current and planned farming activities e.g., broad acre cropping of wheat, cattle, mixed grain and sheep)*
- *Description of the last 5 years land management activities.*
- *Business planning - company structure, succession planning, taxation, finance.*

## Property details

*Describe the property where the carbon farming project is planned. Details should include:*

- *Property address, average winter rainfall zone*
- *Total property area and the project area (in hectares) within the property boundary.*
- *Insert a property map showing property and project boundaries, co-ordinate, and legend. If you do not have access to an existing property map, you can generate one using DPIRD's [Natural Resource Info \(WA\) digital mapping tool](#).*

## Spatial analysis

### Carbon Estimation Areas (CEAs)

*Identifying CEAs according to their inherent capability will help determine the most appropriate areas for the new activities and may increase likelihood of success.*

- *Include a property map and/or heat maps, and a description of soil types in the project area (with a legend or key).*
- *There is a range of online mapping tools such as DPIRD's [Natural Resource Info \(WA\) digital mapping tool](#) which shows soil-landscapes, land systems, land capability and land qualities.*

*DPIRD's [Co-benefits Information Portal](#) has soil types and factors impacting them and can be used for mapping.*

## Site assessment

*Landowners understand their soil types and past activities better than anyone. An on-ground assessment of the different soil types, topography and qualities of the soil is essential to apply the most suitable project activities that will lead to an increase in soil organic carbon (SOC). Consider how these fit with existing practises (e.g., grazing/cropping rotations) to achieve the project outcomes*

**Desktop analysis:** *Include spatial analysis showing data such as:*

- *Rainfall*
- *Soil types*
- *Topography*

## Estimated forward abatement

**Sequestration potential:** *Complete a report that indicates the carbon sequestration potential of the project over a 25-year project period. This is based on current levels of soil organic carbon, soil type and practices.*

*Online tools (e.g., LOOC) and probes are available to help estimate the project's carbon sequestration potential and indicate potential project returns.*

## Baseline period land management activities

**Land management activities over the previous 5 years:** *Outline what the land has been used for in the current and the previous 5 years.*

*Provide detailed technical and operational information on the land management activities and usage for each CEA, including:*

- *What is being done (e.g., lupins, grazing cattle)*
- *Details of the location, soil type*
- *Timing (e.g., every season, every two years, with annual cropping rotation, etc.)*
- *Frequency of activities.*

*The baseline period accounts for the years prior to registration of the project and will affect estimation of the sequestration potential. This indicates eligibility and what new activities could be initiated to increase soil organic carbon (SOC).*

## Project activities

**Proposed project activities:** *Provide detailed technical and operational information on the planned activities including:*

- *The type of new, materially different activities planned*
- *Location of the activities (use maps as appropriate)*
- *Timing and frequency of activities (e.g., every season, every two years, with annual Cropping rotation, etc.)*

- *Identify how and to what extent the proposed eligible activity is materially different (additional) to the activities conducted in the baseline period and how these will increase soil carbon (SOC) above the baseline.*
- *Estimate carbon emissions from implementing and managing project activities e.g. fuel, change in other farming activities such as livestock.*

*For the project to be eligible to receive ACCUs<sup>1</sup>, new, and materially different land management activities, as described in the CFP, need to be undertaken.*

*These cannot be started until the project is officially registered by the CER.*

*A list of eligible activities can be found in [Appendix B – Eligible Activities](#).*

*Examples:*

- *It is estimated that by increasing the duration of cover crops from 3 months to over 6 months, SOC can be increased as it reduces carbon lost to the atmosphere through decomposition during extended hot, dry weather conditions.*
- *Researchers investigated the on-farm benefits of soil carbon accumulation following a transition in land use from cereal cropping to grazed pasture.*
- *SOC accumulation was faster in low carbon soils (0.3-0.48 t C / ha / year) compared to their high carbon counterparts (0.02-0.23 t C / ha / year)<sup>2</sup>.*
- *The project area is deemed to have low levels of carbon and the transition to permanent pasture /crop pasture rotation is predicted to increase SOC accumulation at an estimated rate of 0.35 t C / ha / year based on current rainfall projections.*

**Timing of project activities:** *Identify when each of the listed activities are planned.*

*Including:*

- *expected commencement and completion dates e.g., how many years the program will be implemented over:*
- *the provisions you need to consider for timing the activity and operational flexibility, e.g., if seasonal rainfall is below average, you may limit grazing or utilise green manure standing crops.*

## Cost benefit analysis

*Service providers should base any feasibility advice given to a farmer about a carbon farming project on:*

- *The requirements of the selected method(s)*
- *Individual circumstances*
- *Cost estimates involved in the establishment of the project and ongoing maintenance and management costs.*
- *Initial account and reporting costs.*
- *Ongoing report and audit schedule and estimates of these associated costs.*
- *Report of the project carbon sequestration at each reporting period.*

---

<sup>1</sup> Australian Carbon Credit Units (ACCUs)

<sup>2</sup> [Soil carbon benefits in grazing systems | Primary Industries Climate Challenges Centre \(piccc.org.au\)](#)

- *Forecast of ACCU prices and the impact of future revenue: cost/benefit analysis that includes the Net Present Value (NPV) of the projected returns after 25 years.*

## Excluded and restricted activities and approvals

**Excluded and restricted activity statement:** *Confirm that activities restricted in **Section 11** of the Estimation of Soil Organic Carbon Sequestration using Measurement and Models) Methodology Determination 2021, or that are in breach of **section 12** will not be conducted.*

*Refer to Appendix C.*

**Approvals and permits:** *List any permits required. This may include a notice to drain or pump water.*

## Monitoring, reporting and auditing

*A Carbon Farming Plan should include a detailed monitoring, reporting and auditing section. It should also include the discounting provisions for the soil carbon method and the sampling plan and how it aligns with the model/technology to be used.*

*“Co-benefits” are defined as the positive environmental, economic and social benefits that arise from a project that add to the value of the carbon.*

*Example: Soil health metrics may include conductivity, cation exchange capacity, pH, sulphur, phosphorus, potassium, magnesium and nitrogen measured and analysed at the same time as SOC. Laboratory analysis data to be reported. Soil erosion metrics will include satellite imagery (before, during and after) demonstrating increase in groundcover has occurred. Satellite images and independent assessment to be reported. Soil compaction, water repellence and water infiltration rates may also be considered.*

*Describe what is needed to monitor and measure how the activity(s) are achieving soil carbon sequestration objectives, soil health and agricultural productivity co-benefits, and the metrics to be used including:*

*Contracting experienced, qualified soil sampling technicians – check the Service Provider Directory.*

- *Planned start date for sampling year 0 baseline (after registration).*
- *A list of sampling techniques employed, and a record of the coordinate system used to ensure repeatability of sampling over the project length.*
- *GPS location of sampling sites.*
- *A business operations and seasonally appropriate sampling time to be undertaken at the same time of year at each sampling event, i.e., dry period before opening rains in January. Sampling the soil at the same time of year (preferably before rapid plant growth) minimises seasonal variation and shows the land-use and management effect.*
- *Analysis of SOC by an ASPAC and NATA certified laboratory reported as % C per ha.*
- *Sampling and modelling within every 5 years after year 0 baseline.*



## Limiting factor and risk considerations

*Consider how other activities being conducted in the project area and environmental factors may limit increases in soil carbon and present risks to maintaining it, for example:*

- *Soil constraints - acidic soil may limit the likelihood of soil carbon increases.*
- *Changes in rainfall - drought may be a risk to maintaining soil carbon stocks.*
- *Liming for yield improvement – liming can impact the rate of carbon sequestration.*
- *Stubble burning for disease suppression may limit the rate of carbon sequestration.*
- *Annual emissions from activities in the project area such as emissions from livestock, synthetic fertiliser application, lime application, residue and tillage events and irrigation energy and potential increases.*

## Risk assessment and permanence

**Risk Assessment:** *Detail the risk management plan.*

*Include information on the mitigation activities planned to protect and maintain the carbon stocks credited to the project. Identify:*

*Risks that remain high after mitigation/control actions have been implemented should be considered as significant limiting factors to successful delivery of the proposed activities.*

**Permanence considerations:** *State the provisions considered to ensure carbon permanence over the selected period (25 or 100 years).*



## Qualified person statement (author)

*Provide information outlining the qualifications of the person who prepared and/or reviewed the Carbon Farming Plan as per section 13(8):*

**Business Name:**

**ABN/ACN:**

**Address:**

**Phone:**

**Email:**

**Qualifications:**

**Experience:**

**Professional Memberships:**

**Acknowledgement of having no financial interest in the project:**

*\*\*Note: the same person cannot prepare the Carbon Farming Plan and conduct the soil sampling.*

## Independent person declaration (CFP reviewer/auditor)

**As outlined under s13(8)**

I (an independent person),

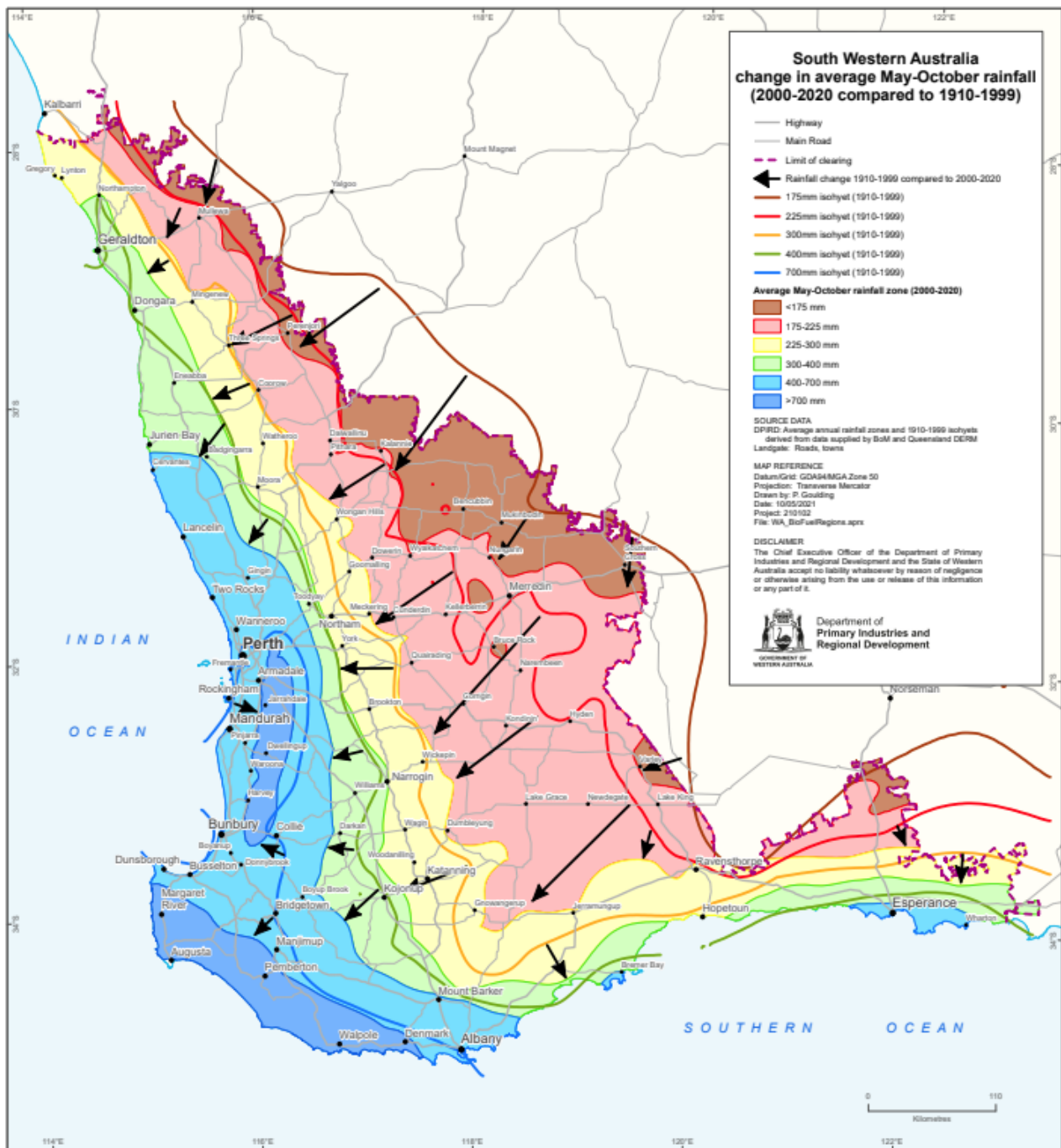
Declare that in my opinion:

- (i) activities excluded by s11, or in breach of s12, are not being conducted or proposed to be conducted; and
- (ii) (ii) the eligible management activities meet the requirements of paragraph 7(2)(b); and
- (iii) (iii) the overall impact of all land management activities conducted on the land could reasonably be expected to improve soil carbon stocks over time.

SIGNED: \_\_\_\_\_

DATE: \_\_\_\_\_

# Appendix A – Rainfall Zones



## Appendix B – Eligible Activities

Source: Understanding your soil carbon project - simple method guide

### Eligible new activities

- (i) applying nutrients to the land in the form of a synthetic or non-synthetic fertiliser to address a material deficiency.
- (ii) applying lime or other ameliorants to remediate acid soils.
- (iii) applying gypsum to manage sodic or magnesian soils.
- (iv) undertaking new irrigation.
- (iv) re-establishing or rejuvenating a pasture by seeding or pasture cropping.
- (v) establishing, and permanently maintaining, a pasture where there was previously no or limited pasture, such as on cropland or bare fallow.
- (vi) altering the stocking rate, duration or intensity of grazing (or any combination of such activities) to promote soil vegetation cover or improve soil health, or both.
- (vii) retaining stubble after a crop is harvested.
- (ix) converting from intensive tillage practices to reduced or no tillage practices.
- (x) modifying landscape or landform features to remediate land.
- (xi) using mechanical means to add or redistribute soil through the soil profile.
- (xii) using legume species in cropping or pasture systems.
- (xiii) using a cover crop to promote soil vegetation cover or improve soil health, or both.

## Appendix C – Ineligible Activities

Source: Understanding your soil carbon project - simple method guide

### 1 Activities not to be conducted.

- (1) Activities excluded by this section must not be conducted on land that is, or is to be, part of a CEA in the period commencing on the date of the section 22 application for the project and ending at the end of the permanence obligation period for the project.
- (2) Land under pasture must not be de-stocked unless:
  - (a) the land is to be converted to a cropping system; or
  - (b) the de-stocking period is within the relevant drought period for the land; or
  - (c) the Regulator agrees in writing that exceptional circumstances exist.

Note 1: Reducing stocking density on land that is, or is to be, part of a CEA is not an excluded activity.

Note 2: Exceptional circumstances may include a disease outbreak among livestock.

- (3) After the completion of the baseline sampling round:
  - (a) land management activities must not disturb the soil any deeper than 10 centimetres above the baseline nominated soil depth.
  - (b) pyrolysed material that is not biochar must not be applied.
- (4) Land management activities must not be conducted on hyper sulfidic material that would result in one or more of the following:
  - (a) drainage.
  - (b) physical disturbance.
  - (c) the application of lime to the land.

Note: Project proponents may choose to exclude soils with hyper sulfidic material (i.e. acid sulphate soils) from CEAs to avoid the risk of breaching this subsection.

- (5) An activity notified to the project proponent in writing by the Regulator under subsection (6) must not be conducted.
- (6) The Regulator may notify a project proponent of one or more activities that must not be conducted if:
  - (a) the Regulator is satisfied that the activity may result in the crediting of non-genuine carbon abatement; and

Note: Actions which directly or indirectly increase the value of or reduce the value of  $E_{net}$  result in additional crediting under the Act. Non-genuine carbon abatement could include activities which increase crediting under this determination without a corresponding overall benefit from the removals or reduced emissions, such as through leakage.

(b) the Regulator has consulted the project proponent on the need to make such a notification.

(7) In this section, **relevant drought period** for any land means the period of time:

- (a) commencing when the land is shown as mapped within a region which is recorded on the Bureau of Meteorology's 24-month recent and historical rainfall map, or another equivalent map approved by the Regulator, as having a rainfall percentile ranking as:
  - (i) serious deficiency (rainfall lies above the lowest five per cent of recorded rainfall but below the lowest ten per cent (decile range 1) for the period 1900-present); or
  - (ii) severe deficiency (rainfall is among the lowest five per cent for the period 1900-present); or
  - (iii) lowest on record (rainfall is lowest for the period 1900-present); or
  - (iv) some combination of clauses (i), (ii) and (iii); and
- (b) ending on the date the land is no longer shown as mapped within that region.

Note: As of 17 August 2021, the Bureau of Meteorology's 24-month drought map was available at:

<http://www.bom.gov.au/climate/maps/rainfall/?variable=rainfall&map=drought&period=24month&region=nat&year=2021&month=09&day=30>

## 2 Restricted activities

(1) Activities mentioned in this section must be conducted in accordance with this section on land that is, or is to be, part of a CEA in the period commencing on the date on which the section 22 application for the project is submitted and ending at the end of the permanence obligation period for the project.

(2) Woody vegetation may be cleared only if:

- (a) any clearing is undertaken in accordance with any applicable regional natural resource management plan and Commonwealth, State, Territory or local government environmental and planning laws; and
- (b) at least one of the following apply:
  - (i) the clearing is to manage woody horticulture crops, as part of standard business operations.
  - (ii) the clearing is required to manage woody horticulture crop, following a disturbance.
  - (iii) the clearing is to manage growth of a known weed species as defined in the CFI Regulations.
  - (iv) the clearing is required to reduce the risk of fire.
  - (v) the land was not under forest cover in the 5 years prior to the lodgement of the section 22 application for the project or the section 29 application for the land.

- (3) Thinning of the land is only permitted if:
- (a) the thinning is to the extent necessary to comply with Commonwealth, State, Territory or local government environmental and planning laws; or
  - (b) the thinning is of woody biomass to be used either:
    - (i) as firewood for personal use and the carbon stock in the land after the thinning would not be more than 5% less than it would have been if the biomass was not thinned; or
    - (ii) in accordance with traditional indigenous practices or native title rights; or
  - (c) at least one of the following apply:
    - (i) the thinning is to manage woody horticulture crop, as part of standard business operations.
    - (ii) the thinning is required to manage woody horticulture crop, following a natural disturbance.
    - (iii) the thinning is to manage growth of a known weed species as defined in the CFI Regulations.
    - (iv) the thinning is required to reduce the risk of fire.
    - (v) the land was not under forest cover in the 5 years prior to the lodgement of the section 22 application for the project or the section 29 application for the land.
- (4) Land management activities may involve the addition or redistribution of soil using mechanical means (including through clay delving, clay spreading or water ponding) only if:
- (a) the soil is sourced from CEAs that are part of the project; and
  - (b) sampling is undertaken at a baseline nominated soil depth greater than the depth of any soil:
    - (i) sourced for the land management activities; and
    - (ii) added to the soil profile; and
    - (iii) incorporated through the soil profile; and
  - (c) the land where any soil is sourced is remediated as soon as is practice

Note: Remediation could involve returning sandy topsoil to a clay pit immediately after the clay is extracted.

- (5) After completion of the baseline sampling round, soil amendments containing biochar may be added to soil within a CEA only if:
- (a) the biochar was sourced or created from:
    - (i) CEAs that are part of the project; or
    - (ii) both of the following are satisfied:
      - (A) organic matter that previously formed part of a designated waste-stream.
      - (B) the application of the biochar to the CEA is in accordance with the laws and regulations of the relevant State, Territory or local government.

- (b) otherwise—the soil amendments are applied:
    - (i) if the carbon content of the soil amendments is known—at a rate lower than 100kg of carbon per hectare per calendar year.
    - (ii) otherwise—at a rate lower than the default carbon content specified in the Supplement, per hectare per calendar year.
  - (6) After completion of the baseline sampling round, soil amendments containing coal may be added to soil within a CEA only if they are applied:
    - (a) if the carbon content of the soil amendments is known—at a rate lower than 100kg of carbon per hectare per calendar year; or
    - (b) otherwise—at a rate lower than the default carbon content specified in the Supplement, per hectare per calendar year.
  - (7) After completion of the baseline sampling round, restricted non-synthetic fertiliser may be added to soil within a CEA only if it is applied:
    - (a) if the carbon content of the restricted non-synthetic fertiliser is known—at a rate lower than 100kg of carbon per hectare per calendar year.
    - (b) otherwise—at a rate lower than the default carbon content specified in the Supplement, per hectare per calendar year.
- Note: If a product is a combination of non-synthetic fertiliser and restricted non-synthetic fertiliser, the requirements of subsection (7) apply to the restricted non-synthetic fertiliser.
- (8) After completion of the baseline sampling round, irrigation may be applied to CEAs within a project area only if both of the following apply:
    - (a) disregarding new irrigation, the annual level of irrigation for the project area, or the CEAs within the project area, is not more than 20% greater than the highest annual level of irrigation in the baseline period.
    - (b) disregarding new irrigation, the 5-yearly total level of irrigation for the project area, or the CEAs within the project area, is not more than 20% greater than the total level of irrigation in the baseline period.

#### Important Disclaimer

The Chief Executive Officer of the Department of Primary Industries and Regional Development and the State of Western Australia accept no liability whatsoever by reason of negligence or otherwise arising from the use or release of this information or any part of it.

Copyright © State of Western Australia (Department of Primary Industries and Regional Development), 2025.