

# Shelterbelts for Carbon



## Investigating potential carbon sequestration and revenue from shelterbelt plantings on 10 farms

Ai Carbon has worked with 10 farmers and the Murraylands and Riverland Landscape Board to design shelterbelt plantings, investigate potential carbon sequestration and revenue, and assess impacts on the farm carbon account.

### Preliminary findings

**Carbon yield:** Models indicated mallee belt plantings in 300-350mm rainfall areas should yield 7-10 tCO<sub>2</sub>e/ha/yr. Plantings in the higher rainfall areas of the Murraylands and Riverland would yield closer to 9 tCO<sub>2</sub>e/ha/yr.

**Drivers of carbon yield:** Between properties or regions, rainfall was the main factor influencing modelled carbon yields. Within each property or site, soil type was the main factor influencing modelled carbon yields.

**Timeframe for return:** Based on the most likely carbon price projections, most modelled projects recovered costs within 6 years, and produced carbon revenues three to five times initial costs.

**Planting design:** Compared to belt plantings, block plantings produced approx. 30 to 40 % lower carbon yields, but lower fencing costs led to project returns being similar.

**Mallee vs environmental plantings:** Changing from mallee tree species to 'mixed environmental plantings' led to an approx. 25 % reduction in carbon yield.

**Offset potential:** For the case study farms, shelterbelt designs would likely offset between 16 and 100% of farm emissions.



### More information

For more information on this study and carbon farming opportunities email [info@aicarbon.com](mailto:info@aicarbon.com) or visit [aicarbon.com](http://aicarbon.com).

*The information provided in this factsheet should be considered as general advice only. To assess the economic feasibility of a particular project, specific advice should be sought taking into account the characteristics of that project and up to date carbon price. We accept no liability arising from using the information on this factsheet.*



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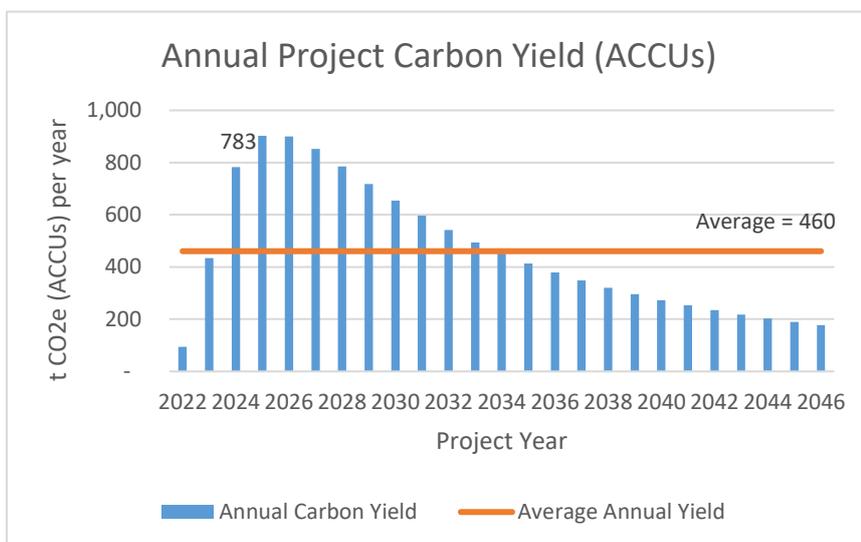
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### Farmer views

- The carbon revenue from shelterbelts appeared attractive. Co-benefits of shelterbelts such as better animal welfare, water balance and biodiversity conservation were considered a bonus.
- Obstacles to planting direct seeded shelterbelts include high upfront costs, risks associated with planting large projects at once, and reporting requirements.
- Shelterbelts are likely to become more widespread in future, planted first by farmers focused on co-benefits or needing to revegetate difficult soils. Farmers mostly want to 'start small'.
- Uptake of shelterbelts will likely increase if biodiversity credits can also be generated, or the price of carbon goes up beyond the 'base case'.
- Many farmers are more interested in off-setting their own emissions than in selling credits. The planting of 3-5% of mixed farms, or 6-10% of pure livestock properties, allows a significant proportion of farm emissions to be offset.
- Farmers often need help with project registration, site preparation, types of trees to plant and method, where to get seed, and how to generate carbon (and biodiversity) credits.
- Opportunities may arise for smaller projects if projects can be aggregated in future.



**Fig. 1** Example yield curve for a 53 ha shelterbelt design in 400mm rainfall



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