A Beyond Zero Future for South East NSW

fact sheet

Tree Power

The Value of Trees on Farms

Stony? Steep? Boggy? Ridgeline? Eroded?

Trees planted in farms as shelterbelts and in hard-to-graze areas can draw down carbon for selling on the carbon market.

If 1 ha is stocked with trees, it will draw down 3.7t$C0_2$ which is close to the emissions of an average car driving 15,000km.

Tree and shrub shelterbelts provide many benefits, including:

- Retention of soil moisture
- Cooling of the area
- Protection against erosion
- Attraction of birds (which eat pests)
- Provision of shelter for stock, which can:
    - reduce lamb mortality by 10%
    - increase live-weight gain by 21%
    - increase wool production by 31%
    - increase cattle yields by 20-30%

What can trees earn on the carbon market?

- At the latest Commonwealth government Climate Solutions Fund auction price of \$16/tCO_2, reforesting 100 ha of land would earn an average of \$6,620 annually.
- Over the 25 years that the land must be guaranteed to remain forested, the total earned would be **\$166,000** for a **drawdown of 10,350 tCO_2**.

What are the costs?

- Planting costs can vary between \$1,000 to \$10,000 per hectare depending on whether a plot can be direct-seeded or needs tubestock planted by hand.
- Small parcels can be aggregated across farms by carbon marketing firms to achieve economies of scale in marketing, certification and carbon measurement costs.

What is needed to help pay the costs?

- The current Climate Solutions Fund carbon price of \$15-\$20/tCO_2 needs to at least triple in order for landowners to break even on their tree-planting investment.
- **In Europe, the current price is €50 (\$AUD80) per tCO_2.**
- International markets are looking to buy Australian carbon credits to meet demand.
- **At \$80/tCO_2/ha, the return from carbon credits on 100ha drawing down 3.7tCO_2/ha/yr over 25 years would be \$740,000 (\$7,400/ha).**
- With a reasonable carbon price, upfront costs, operational costs and marketing costs can be recovered over time.
- **Increased land productivity, ecosystem enhancement and long-term capital growth are additional on-farm benefits.**

The shire and regional picture

- The 14 South East shires could be large **exporters of nature-based carbon certificates** through reforesting of marginally productive, unproductive or poor grazing land.
- The 14 South East shires have a combined land area of 6.8 million hectares.
- Of this total, 2.1 million hectares (33%) of previously cleared land is available for reforestation (Table 1).
- A 10-year program of reforesting 10% of available land across these 14 shires would inject \$1.6 billion into the regional economy over 25 years (Table 1).
- **For the South East region, a 10-year reforestation program would inject 14,600 job-years into the local economy**.

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Actions

- Through carbon drawdown into trees, farmers can make a major contribution to climate solutions.
- *Farmers for Climate Action* are working to:
  - ◊ establish a *Land and Environment Investment Fund*
  - ◊ support innovation and attract large-scale investment in carbon farming
  - ◊ *Regional Resilience Hub Network to* spread best practice.

Replanting 1% of cleared farmland each year would draw down just 8% of the CO_2 currently lost to logging of State Forests each year. Clearly, as well as re-planting, it is important to leave large trees in the ground.

Table 1: Reforesting 10% of the 2.1 Million Available Hectares of Agricultural Land over 10 Years (1% per year)

Available Resource		Carbon Draw-	Economic Value			Emissions
Shire	1% of Farmland Reforested Annually (hectares)	Annual Draw-down from 1% Reforestation of Farmland (tCO_2)	Annual Value of Drawdown at Carbon Price of \$80/tCO_2	25-year value of 10% Reforesta-tion of Available Farmland	Reforestation Jobs Over 10 Years (FTE-years)	Annual Emis-sions from Shire (tCO_2)
Bega Valley	1,100	6,000	\$480,000	\$120,000,000	800	494,000
Eurobodalla	300	1,900	\$152,000	\$38,000,000	200	438,000
G'burn-M'waree	2000	6,700	\$536,000	\$134,000,000	1,400	688000
Hilltops	1200	3,400	\$272,000	\$68,000,000	800	885000
Kiama	100	900	\$72,000	\$18,000,000	100	300,000
Q'beyan-P'rang	1,000	3,400	\$272,000	\$68,000,000	700	1,040,000
Shellharbour	100	500	\$40,000	\$10,000,000	100	670000
Shoalhaven	500	3,600	\$288,000	\$72,000,000	400	1,377,000
Snowy Monaro	3,200	11,000	\$880,000	\$220,000,000	2,200	735,000
Snowy Valleys	2,200	8,700	\$696,000	\$174,000,000	1,500	611,000
Upper Lachlan	6000	20,300	\$1,624,000	\$406,000,000	4,200	417000
Wingecarribee	800	4,100	\$328,000	\$82,000,000	600	1123000
Wollongong	0	300	\$24,000	\$6,000,000	0	2729000
Yass Valley	2,400	7,800	\$624,000	\$156,000,000	1,700	418,000
Total	**21,000**	**78,700**	**\$6,300,000**	**\$1,570,000,000**	**14,600**	**11,925,000**

Cover Image

The Homestead at RABY / Belonging to Alexander Riley Esq / New South Wales. Between 1822 and 1824. Artist Joseph Lycett. In the collection of the National Library of Australia

Footnotes

1. Shelterbelts Brochure - sustainablefarms.org.au
2. Australian Bureau of Agricultural and Resource Economics and Sciences
3. Farmers for Climate Action *Regional Horizons Plan*
4. https://ember-climate.org/data/carbon-price-viewer
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5. Data in Table 1 derive from the references given in https://zerose.space/references/

This is an introductory summary. Technical Report

www.zerose.space