

# Carbon Farming Week 2011

## Preparing Farmers to Trade

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## The Science of Carbon in the Landscape

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Thank you for inviting me to speak to you today. I share your great passion for the conservation and sustainable management of the Australian landscape.

I want to talk about the science of carbon in the landscape and what it tells us about the opportunities a price on carbon presents for farming and conservation in Australia.

3 perspectives:

1. the potential of our landscape to absorb carbon
2. the economic opportunities from a price on carbon
3. the potential multiple benefits from carbon offsets

And also the institutional changes needed so that we optimise this carbon in the Australian landscape

### **Introduction**

Decisions that farmers make about land and water management, not only in Australia, but around the globe, are of vital importance to the health of our planet.

Farmers produce the food and fibre on which our civilisation is built. They are also the custodians of our precious natural resources: our soils, our fresh water resources, biodiversity.

As a nation we have grown wealthy on the food and fibre produced by innovative farmers. We have all shared in that wealth and we expect to continue to benefit from it.

But the agricultural practices we have imposed on this continent were developed to suit a very different place – the wet, fertile landscapes of Europe.

Today much of our agriculture depends on the acceptance of high levels of natural resource degradation: to our rivers, wildlife, wetlands, and estuaries.

Most farmers don't like it, most Australians don't like it – but that's what the current markets demand because we have not found a mechanism by which we can embed the costs of environmental protection into the price of food and fibre.

Yes, we have made progress: we have made changes to taxation law that both recognise the unique circumstances that go with farming in Australia; and that also allow farmers to claim tax deductions for undertaking conservation action.

And there has been a cultural reform – the Australian Landcare movement.

Landcare's great contribution to our nation is that it has brought about a fundamental change in the way Australians see our landscape and our place in it.

This conference today is a testament to that change.

It has created a new understanding, that we are part of the history of the nature of this unique and ancient land, not some transient European outpost, and that having made this choice, we know that we need to learn how to live sustainably in it.

Our problem is that Australia is a nation of 22 million people on an ancient continent of 7.5 million square kilometres.

Our problem is we have never had the financial resources to deal with the problems we are confronting.

The Commonwealth government's flagship environment program *Caring for Our Country*, has a total annual budget of \$400 million: an investment of 50 cents per hectare.

If our nation is to have any hope of living in harmony with our dry, flat, ancient continent, with its unique biodiversity and its soils that are naturally depleted in nutrients and high in salts, we need a radical change to the economics of land and water management in Australia.

And here's the good news:

If Australia and the world acts in what is patently in our own self interest to address the risks posed by climate change, the way the Commonwealth government has cleverly designed the climate change legislation, a price on carbon has the potential to create an economic platform that could unleash a revolution in landscape conservation across the Australian continent.

### **Carbon in Terrestrial Landscapes**

Let me start with the science: the power of terrestrial carbon to contribute to the climate change solution.

Terrestrial landscapes store vast quantities of carbon

If we were increase in the world's terrestrial carbon stock by 15%, that would remove the equivalent of all the carbon pollution emitted from fossil fuels since the beginning of the industrial revolution.

Hold that thought for a moment.

### **The Potential of Australian Landscapes to Absorb Carbon**

CSIRO estimate that the Australian landscape has the biophysical potential to store an additional 1,000 Mt of CO<sub>2</sub>e in soils and vegetation each year for the next 40 to 50 years.

If we could capture just 15% of this biophysical capacity, it would offset the equivalent of 25% of Australia's current annual greenhouse emissions for the next 40 years.

Professor Lesley Hughes and other experts have described the need to build resilience into our landscapes so that they can adapt to change.

Just imagine the improved health of Australian farms if we added 15% of carbon into those landscapes.

### **The Economic Opportunities in the Land Sector from a Price on Carbon**

Some ball park figures of just one example of terrestrial carbon to give you an understanding of the scale:

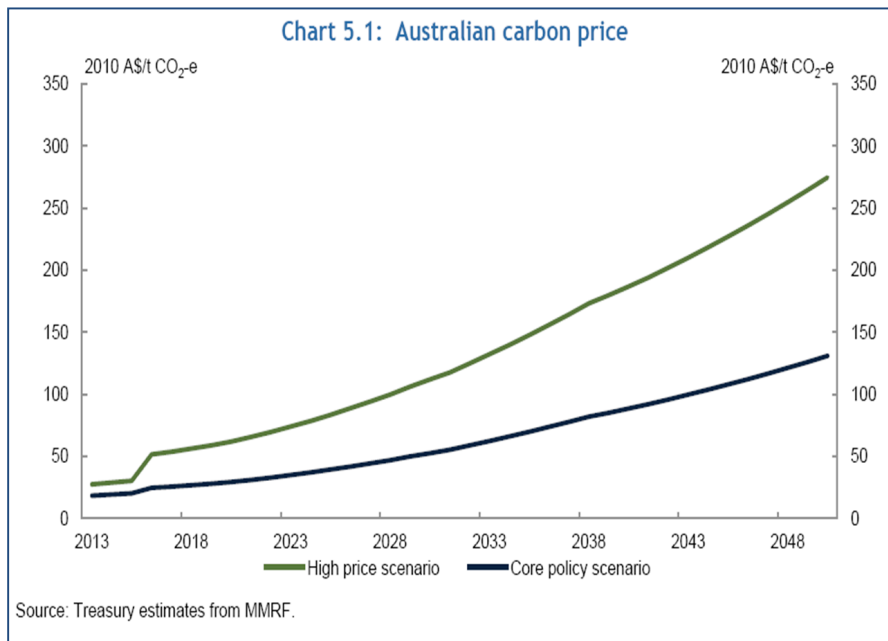
- It costs around \$2,000 per ha to revegetate over-cleared forests and woodlands in Australia.
- One ha will sequester on average 7 tonnes CO<sub>2</sub>e pa.
- At \$23 per tonne, that's a potential revenue of \$170 per ha pa – not bad, but it would take years just to pay off the capital costs.
- All the debate is about \$23, but what gets little attention in our short term political debates we seem to be having these days, it that this will grow as our targets deepen and as it grows offsets become more and more profitable.
- At \$50 per tonne, potential revenue rises to \$370 per ha pa.

Recent CSIRO modelling shows: everything depends on the price.

But there are consequences: food production, water resources, jobs in regional communities reliant on value added agriculture.

There are of course, also many other opportunities which could increase carbon stocks, improve landscape condition and improve farm production. One area where such a potential exists is in re-designed the way we manage our vast grazing lands, which is one focus of this conference. But this too still faces significant political, economic and technical challenges.

Our challenge is to direct this carbon into the right parts of the landscape – I will come back to this.



## Potential Multiple Benefits from Carbon Offsets

The government's climate change plan creates a brand new commodity - carbon offsets.

It has the potential to create substantial co-benefits for landscape health and climate change adaptation.

Why?

Biodiversity is carbon - healthy soils store carbon.

- healthier, more productive farms.
- restoring degraded land and river systems.
- building resilience so our landscapes can adapt to change.

A farm covered in a healthy layer of grass with the deep roots that go with it, is far more sustainable than paddocks of bare dirt.

Humanity has many natural resource challenges facing us in the 21st century – not just climate change.

We therefore need a complimentary public policy response that maximises the benefits and minimises the risks from this new carbon offset market.

I will come back to this in a minute.

### The Commonwealth’s Clean energy Future policy as it relates to Carbon Farming Offsets

Shayleen (Thompson) will give you more detailed descriptions of the government’s package, but let me highlight a few points

This package, with its 5%, 2020 target is a modest start, but it does provide the basis for a sophisticated policy response in the land sector.

We have:

- the CFI legislation which creates the rules and regulations;
- a carbon price and therefore a market for carbon offsets;
- a \$1 billion biodiversity fund to help optimise benefits;
- a \$400m fund for research; and
- \$40m for land use planning.

Component of Climate Plan	Finance/funding available						
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
<b>Carbon Farming Initiative</b>							
Estimated value of domestic demand for Kyoto credits	-	\$450 m	\$480 m	\$500 m	unknown	unknown	unknown
Estimated value of international demand for credits	-	unlimited	unlimited	unlimited	unlimited	unlimited	unlimited
Carbon Fund for non-Kyoto projects	-	\$1 m	\$50 m	\$47 m	\$51 m	\$51 m	\$51 m
<b>Biodiversity Fund</b>	\$37 m	\$35 m	\$250 m	\$251 m	\$124 m	\$124 m	\$124 m
<b>Total</b> For carbon sequestration, emissions reduction & biodiversity	\$37 m	\$486 m plus	\$780 m plus	\$798 m plus	\$175 m plus plus	\$175 m plus plus	\$175 m plus plus
<b>Carbon Farming Futures</b>	\$31 m	\$30 m	\$113 m	\$102 m	\$51 m	\$51 m	\$51 m
<b>Regional NRM Planning</b>	-	\$13 m	\$23 m	\$4 m	\$2 m	\$2 m	-
<b>Other land and biodiversity measures</b>	\$1 m	\$5 m	\$5 m	\$4 m	\$5 m	\$5 m	\$5 m
<b>Grand total</b> For land sector	\$69 m	\$534 m plus	\$921 m plus	\$908 m plus	\$233 m plus unknown	\$233 m plus unknown	\$231 m plus unknown

The price will start in 2012 at \$23 per tonne of CO2-e. The price will be determined in the market from 2015.

Until 2020, obligations must be met by purchasing at least 50% of domestic permits or credits. Purchase of international credits is unlimited after 2020.

Carbon polluters can use carbon farming credits to offset their emissions. Limited to 5% in the fixed price period. No limits in flexible price period.

Importantly for Australian farmers, there is unlimited sale of domestically produced carbon offset credits overseas.

Even the 5% cap creates a potential domestic demand value in the short term of around \$400m to \$500m in the fixed price period

We have another \$200m in the biodiversity fund.

This is a modest start - in the order of 20 to 30m tonnes pa - but this will take time – the peak year of the MIS was only 140,000 ha – about 1 million tonnes.

But remember ... the rules allow farmers also to sell credits into the international market. And in 3 years, there is no cap on offsets.

That's good for mitigation, but can cause significant problems

If we're not careful, with a rising carbon price, offsets could swamp the carbon market and affect food prices, as we saw in recent years with the EU biofuels targets.

So State and local governments, and our regional catchment authorities have a very important job ahead of them.

The point I wish to make is that planning for carbon farming offsets cannot be undertaken in isolation of the other challenges facing our natural resources

The good news: the Carbon Farming Initiative legislation and the Clean Energy Plan does provide the basis for a sophisticated public policy response in the land sector

But this is an area of significant scientific and economic uncertainty

We will need to invest effort to get this right, and the benefit of a modest 3 year capped price is that we have the time we need.

## **Conclusion**

We are in a period of great transition – frustrating to many of us.

There is still great uncertainty:

- over the economic and science of offsets;
- the lack of clear international rules;
- the issue of permanence; and
- the lack of support for action from the Coalition.

Many opportunities aren't yet available to attract a full 'Kyoto' market price – such a grazing, cropping and revegetation of shrublands.

These will take time to resolve. If we are patient and with discipline, we will.

But this conference is about the future for Australian agriculture that a carbon market presents.

We have come a very long way in the last 5 years.

What we do know is that if Australia does act to mitigate greenhouse gas emission and puts a price on carbon, we now have a legislative system that can change the way we manage Australia.

The Multi-party Committee has done a good job with how it has linked the Clean Energy Futures Plan with the Carbon Farming Initiative.

It is a sophisticated and responsible first step which if managed well presents Australia with a wonderful opportunity to:

- to build healthier, more productive farms;
- restore degraded land and river systems;
- protect biodiversity' and



- build resilience so our landscapes can adapt to change

Let me conclude with these thoughts.

The arrival of Europeans in 1788 has transformed this remote, ancient island continent. We brought with us the industrial revolution, which has created unimaginable wealth.

We have built one of the most vibrant and stable democracies in human history.

But we also brought habits that are incompatible with the long term health of our landscape.

Over these 200 years we have learnt much but there is still much to learn.

Last year we celebrated the 20th anniversary of the birth of one of the defining cultural changes in our nation's history – the Australian Landcare movement.

It has brought about a fundamental change in the way Australians see our landscape and our place in it.

But the realities are that we are a small nation on a vast continent, and even though we know what we need to do to live in harmony with the nature of Australia, we have never had the economic resources to implement these changes at scale.

Action on climate change can change all that: healthy landscapes store vast quantities of carbon; biodiversity is carbon.

With a responsible emissions reduction target and a price on carbon, a properly guided terrestrial carbon economy has the potential to drive an economic revolution in landscape conservation across our vast continent, a revolution that can last for generations.

Just imagine what this can achieve.

With a price on carbon, we have an opportunity to transform the Australian landscape.