

Farming Carbon, the way of the future?

Carbon credits, the Kyoto Protocol, Permanent Forest Sinks are all phrases that we have heard being thrown about over the last few years, but with only a vague understanding with what the full picture entails. So what does it all mean for the average farmer?

Let's start at the beginning. NZ along 166 states and regional organizations have ratified or accepted the Kyoto protocol, an international commitment to reduce greenhouse gases emissions and promote forest sinks to slow climate change.

The first period of commitment is due to start on the 1st Jan 2008 and finishes 31st Dec 2012. Under the Protocol, countries have accepted different commitments, New Zealand's commitment for this first period is to reduce its average emissions over the 5 years to the same amount emitted in 1990 or take responsibility for it's emissions above that level.

What does this mean to the average farmer? Under the Kyoto agreement itself, not much. This is because at the present time, the Crown is accepting responsibility for all your emissions whilst also claiming all your credits from forestry or scrub reversion to balance the emissions. But, government policy could change in the future and the fart tax is a good example of this. However, thinking long term about your property, consider some of the impact of climate change. On the East Coast this would mean anticipating more frequent droughts, or more intense rainfall and flooding events in the West.

At present the Crown is promoting "common sense" actions to reduce climate change and have major benefits for the environment and for the landowners pocket. These actions include nutrient budgeting to reduce fertiliser wastage and reduce leakage into waterways, and also reduce nitrous emissions from fertiliser use. Planting of trees or retirement of marginal farming land into a bush block or farm forest can have a major soil conservation benefit as well as an effect on slowing climate change. Another industry sector initiative includes research into reducing methane emissions from livestock. All these actions landowners can undertake to do their bit to slow climate change.

The Permanent Forest Sinks Programme is a new Crown option that has certain criteria for forests, and is something farmers or companies can become involved with. Forests soak up more carbon than pasture by removing the CO₂ from the atmosphere. The Kyoto protocol identifies this and allows for emission units to be generated when "new" forest (after 1990) is established. The emission units (carbon credits) account for the CO₂ stored in that forest during that first period of commitment.

The criteria require that when an area of land the forest is established on pasture from 1990 onwards, and some form of active management had to be undertaken to achieve that forest. This active management takes many forms, simply erecting a fence, or choosing not to allow stock to graze areas, through to actively planting forest or under taking pest control, to qualify. Generally these will be set out in a simple management plan. Other qualifications include the requirement for an area greater than 1 hectare, canopy cover of 30%, species must have to potential to grow greater than 5 meters in height.

Farmers can get involved in the Permanent Forest Sinks Initiative by establishing a new forest and then trading the subsequent carbon credits. More and more companies are interested in this programme so they can promote their business as 'carbon neutral' – the CO₂ emissions generated in their day to day business are offset by owning a forest, regenerating land, or by buying carbon credits. When you harvest the forest, the CO₂ is eventually released back into the air, so retiring land into native forest that you're not planning to harvest is the best option, and is encouraged under the Initiative.

This means that the back paddock growing scrub will qualify, as long as you actively choose to exclude grazing stock. The amount of carbon credits received for the back paddock is equal to the amount of CO₂ stored in the scrub for the period between 1 Jan 2008 to 31 Dec 2012. These credits will come from the Crown accounts and are tradable as long as the 'forest' continues to meet the criteria.

Can these forests be harvested under the Permanent Forest Sink Initiative? Only after a minimum period of 35 years, and if a continuous canopy can be maintained. So consideration should be given to the establishment of longer growing species, and the opportunities of higher value timbers that will economic under a selective logging regime. Be wary of offers to plant your land in short rotation commercial forestry plantations, such as *Pinus radiata* for carbon credits. If

harvested before the 35 years, the carbon credits have to be repaid and penalties incurred. Or worse still, an un-harvestable plantation that is susceptible to wind throw and erosion damage, and becomes a greater hazard to your land and farm business.

Does this mean your land is locked up forever? The contracts will be in perpetuity; however they can be changed with mutual consent of the landowner and the Crown. The contract will specify landowner rights and obligations and registered against the land title. Landowners are also able to convert the forest into another land use at any time, provided that the trees are not sold unless under the criteria for harvestable forest (as above) and the landowner must "replace" the CO₂ emissions released back into the atmosphere.

In terms of dollars, because ultimately it all comes down to the farm business bottom line - if we take the previous scrubby back paddock, clear in 1990 but now well on its way to regenerating. This scrub is absorbing roughly about 6-10 tonnes of CO₂ a year per hectare. It is estimated that one carbon credit (1 T CO₂) is worth roughly about \$16 NZ. The returns per hectare are roughly \$100-\$160 for doing nothing. There may also be additional opportunities for further income such as from bees etc.

That same piece of land under livestock farming is probably only carrying 4-6 SU/ ha and netting about \$140-\$210 per ha per year. Realistically these areas are only achieving about a \$35/su margin, by the time all the costs are added up. Carbon credits are worth considering.

There is still a lot of water to go under the bridge before everyone is out there boots and all trading their carbon credits. However, it's currently a hot topic and is challenging landowners to look at new ways to generate the same dollar, and well worth the consideration to complement the farm business. Aim to match the most profitable land uses to the different types of land on your property.

Want to know more? Contact Sarah or Lachie at LandVision Ltd. Or alternatively check out <http://www.maf.govt.nz/mafnet/press/190404climate-faq.htm> or <http://www.kyoto.co.nz/>