

CHANGING FARMING, CHANGING CLIMATE ?

Part II

“Putting Carbon back where it belongs – in the earth” is a sentiment echoed by agricultural, environmental and political groups alike.

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Agricultural groups, like many industries are looking for ways to operate under proposed changes to how we look at Carbon Emissions. 82% of the earth's Carbon is located in soil and losses from soils can be greater than any other source.

Dr Christine Jones, of the Australian Soil Carbon Accreditation Scheme, claims Australia's total annual Carbon emissions could be sequestered by increasing soil Carbon levels by ½% across just two percent of our agricultural land. This program, launched in 2007, rewards land holders for adopting innovative techniques that reduce atmospheric carbon dioxide and water vapor (the major greenhouse gas contributors) by sequestering soil carbon and improving soil water-holding capacity.

A loss of soil Carbon can result in
50-80% loss in water holding capacity
Reduced fertility, organic matter, pH (increased acidity)
Reduced bio-availability of nutrients

Changes to management practices can result in the soil containing up to five times more organic Carbon than degraded soils. There are organizations working with farmers to sequester (incorporate back into the soil) Carbon back into their soils, paying them a premium to do so. Such schemes are expected to commence in 2009.

For every extra 1% of C trapped in a metre of soil, an extra 20 litres of water can be held.

Increasing organic matter (humus) in the soil not only sequesters Carbon, but it is also high in Nitrogen (N) and improves the soil's ability to trap more N & C. Carbon is naturally sequestered in topsoil via biological processes surrounding actively growing roots of pasture grasses and cereals. Encouraging these processes is cheap, efficient, and ecologically beneficial. Carbon enters soil in liquid form, which is then humified and incorporated into soil structure. In other forms (eg charcoal) Carbon will be resistant to incorporation and be released within 18 months. Soil Carbon levels can be increased by adopting forms of carbon farming, including time-controlled grazing management, pasture cropping and biologically beneficial farming practices.

What does this all mean to us ?

In Victoria, CSIRO predict climate change may cause seasons to shift 2-3 weeks later than current, a 4% drop in rainfall, a 3% drop in humidity and an average temperature increase by 0.8°C by 2030. So these moderate changes are nothing like some of the more extreme predictions made in media broadcasts.