**THE NEXT 15 YEARS...**
Climate change will increasingly affect us all in every aspect of our lives. Because agriculture is so reliant on climatic conditions, farmers will need to be at the forefront of adaptation to changed climatic conditions and the potential dramatic impacts on agricultural production in the Wimmera. By 2020 we can expect:

- Average temperatures to increase by around 1°C
- Up to 20% more drought months in some areas
- Up to 25% increase in days of very high extreme fire danger
- Increases in storm surges and extreme weather events

It is conservatively predicted that with a ‘business as usual’ scenario, production will decrease by 2030: - wheat by 9.6%, sheep 7.1%, beef 2.4% and dairy by 4.6%. At the same time we will need increased food production for predicted population growth. It is therefore in all our interests that the next generation of farmers inherits an agricultural industry that is economically, environmentally and socially sustainable. **That means we need to act now!**

**AGRICULTURAL GREENHOUSE GAS EMISSIONS**
During the next 15 years the need to reduce GHG emissions and account for them will have significant consequences for agriculture. According to the Nation GHG Inventory, agriculture accounts for 17.7% of Australia’s GHG emissions (this excludes emissions from on-farm energy use and transport which are “accounted for” in the energy and transport sectors). The two main sources of agricultural emissions are methane which is a 21 times more potent GHG than its CO₂ equivalent and nitrous oxide which is 310 times more potent.

The main source of methane emissions is from enteric fermentation in ruminants, released from microbes in the rumen and belched or breathed out. Dairying contributes 40% and sheep/cattle enterprises 30% of agricultural methane emissions.

Nitrous oxide is primarily lost from microbial activity in agricultural soils as a result of cultivation, legumes, nitrogen fertilizer and animal excreta. The losses of nitrogen gases are greatest when soils are warm and waterlogged. Nitrogen lost through volatisation/denitrification is estimated to cost $200 to $2000 per 1000Ha cereal crop and is costly to our environment also.
NOT ALL DOOM AND GLOOM!

Because agricultural activities are not included in the proposed Carbon Pollution Reduction Scheme farmers have the opportunity over the intervening years to prepare for their likely inclusion some time after 2015.

The climate change scenario also has some potential opportunities for farm income from carbon credits from revegetation/forestry and sequestering carbon in soils. Vegetation, especially trees, significantly reduce GHG in the atmosphere and trees planted since 1990 can now be traded for carbon credits. Research on sequestering carbon in soils is showing promising results and increases in soil carbon on Australian farms are attracting carbon credits from private companies in the USA and in Australia.

It is likely that new marketing opportunities will emerge for agricultural products with a low carbon footprint, as has happened in Europe.

WHAT CAN YOU DO RIGHT NOW?

- Conduct a Greenhouse Gas Self Audit on your farm to see which aspects of your business are a priority for change.
- Work towards a carbon neutral farm enterprise and be rewarded in the market place and in the pocket.
- Look at research on stock feeding regimes which will reduce methane emissions and improve stock feed digestibility.
- Switch to stock with low methane emissions.
- Look at your application of nitrogen fertilizer in the light of current research.
- Think about the mix of farming enterprises which will better survive the harsher climatic conditions projected for the Wimmera.
- Start planting trees to sequester carbon and contribute to your farms carbon credits.
- Look at planting a crop which will provide your farm with its own supply of biodiesel.
- Reduce tillage and maintain ground cover to retain carbon in soils.
- Improve pasture management.
- Maximise fertiliser inputs through improved timing of application.

MORE INFORMATION IS AVAILABLE:

www.amazingcarbon.com
Dr Christine Jones on soil carbon, pasture cropping trials, trading of soil carbon.
www.greenhouse.crc.org.au
-CRC Greenhouse Accounting.
www.greenhouse.unimelbourne.edu.au
-Greenhouse in Agriculture program.
-Soil carbon.
www.climatechange.gov.au
-Department of Climate Change.
-Climate change impacts from Dept. Agriculture Fisheries and Forestry.
-Soil carbon.
www.environment.gov.au
-list of climate change websites.