

Agriculture can help provide solutions to climate change by providing cheap offsets and partnering with the renewable energy sector. However the following issues have to be resolved.

Research and development

The farm sector is seeking government funding for a new agricultural climate change research and development body. This body would commission and deliver research on cross-agricultural climate change issues as well as integrate sector-specific climate work being delivered by existing agricultural R&D corporations. R&D areas would include adaptive technology (eg: new crops and breeds, means of lowering fertilizer and cultivation inputs), farm carbon accounting, measurement and monitoring issues, industry partnerships (eg: with renewable sector), farm offset instruments, and socio-economic analysis of structural scenarios to facilitate the adaptation of farm businesses and regional communities to changing climatic conditions.

Carbon accounting

- 1) **Inaccuracy in measuring the emissions.** Agricultural emissions are modelled and are not based on absolute measurement. Furthermore, the models used to estimate emissions from livestock and fertilizer application are adapted from northern hemisphere science and data. Their applicability to Australian conditions and their reliability have not been established in any robust manner. It is unreasonable that AGO documents and other literature confidently report agricultural emissions as being 17% of the national total without making clear the high margin of error and the speculative nature of the estimates.
- 2) **A failure to recognize and report the net CO₂e balance of farms.** The majority of agricultural emissions are rapidly recaptured by agriculture (sometimes within hours or days) via natural processes to be stored in soil, microorganisms, livestock and vegetation (grasses, crops, trees etc). Current carbon accounts, however, greatly disadvantage agriculture as they register the emissions, but do not fully account for the sequestration. A net balance model is needed for agriculture as well as more appropriate treatment of permanence and additionality rules.
- 3) **A failure to fully recognize and reward the ability of agriculture to recycle greenhouse gases within its own system.** It is a fundamentally different act to release 100 million-year-old, highly stable fossil carbon than it is to temporarily release greenhouse gases as part of a cyclical agricultural process. The focus of IPCC and AGO climate change policy is the global warming potential of gases in the atmosphere, irrespective of source. The farm sector believes, however, that it is incorrect to disregard the source and that policy should discriminate in favour of sectors that are inherently sustainable. Agriculture has within it the means of establishing a balanced carbon cycle and this applies to greater or lesser degree to all of the greenhouse gases released by agriculture. This technology, moreover, is basic and available today, unlike 'clean coal' and 'geo-sequestration'.

The Australian carbon market

The timing of agriculture's inclusion under the cap is a critical. With discussions underway about a joint Australia/NZ market, the inclusion of agriculture may be sooner than currently expected. This raises many questions including what benchmarks and baselines would be applied to agricultural sub-sectors and what is the process for developing these? How would measurement and monitoring be delivered? What would be the role of individual farmers in farm carbon accounting? What compensation would be provided?

The compensation model

The compensation model proposed by the Prime Minister's Task Group leaves many questions unanswered for agriculture, some of which include:

- There appears to be significant compensation offered to the energy sector and trade exposed firms. Since the cost of providing free permits will ultimately be passed on to the general

economy and the farm sector, it would be better to keep this aspect of the scheme as minimal as possible. The model also creates opportunities for gaming and opportunity cost pricing. It may be better to issue free permits only post-emission and in proportion to a firm's contribution to the total production of its subsector.¹ This would both reward productive companies and restrict gaming (if a firm elects not to produce/emit, it won't get free credits). It also limits the likelihood of a glut of permits on the market and would increase the value of offsets created on-farm.

- Agriculture is highly trade exposed, but there has been no mention of shielding agriculture. How does the proposed compensation model apply to agriculture? At what point will free permits be provided? To avoid asymmetrical treatment of trade-exposed sectors, farmers should also be granted permits.
- Will there be retrospective compensation? Native vegetation laws have capped emissions from agricultural land use change prior to introduction of the scheme and without compensation. Governments have strongly rejected claims for compensation by farmers for loss of asset value and productive capacity resulting from clearing bans. In principle, however, the proposed compensation approach to establishing a carbon market should cause this position to be revisited. The argument given for rejecting compensation in relation to clearing bans has been that farmers have a duty of care to retain vegetation on their land. Power companies, however, have no less a duty of care regarding greenhouse gas pollution.

The process for developing climate change policy

The Federal Government has advised the farm sector that the rules of the Australian carbon market will be finalised within the next six months. However there is no detailed engagement of the farm sector in this process. It seems likely that the majority of effort will be devoted to addressing the impacts of the scheme on the energy sector and energy intensive firms. The Association would like to have direct contact with the individuals developing the rules and other details of the scheme.

The AGO has adopted an approach that treats standing vegetation as the only legitimate offset and continues to dismiss representations regarding the potential of soil carbon offsets and schemes that involve partnering with renewable firms.

Globally, approximately half of all soil carbon in farmed land has been lost to the atmosphere during the past two centuries due to cultivation. This loss, however, creates an opportunity for carbon storage. The global additional storage potential in agricultural soils is up to 80 billion tonnes, or ten percent of total atmospheric carbon.² The Association is familiar with the arguments customarily put forward by the AGO over the past decade for electing not to include soil carbon under Kyoto Article 3.4 and believes that these are both insufficient and out of date.

What the Association is seeking:

- Government funding for a new agricultural climate change research and development body;
- Review of carbon accounting as it applies to agriculture;
- Resourcing of the Government to enable direct engagement with agriculture;
- Changes to international rules regarding soil carbon.

¹ AMP Capital, March (2000), Lessons from the EU Emissions Trading Scheme and Emission Intensity Permit Allocation.

² Bruce, J.P., M. Frome, E. Haites, H. Janzen, R. Lal, and K. Paustian. (1999). *Carbon sequestration in soils. J. Soil and Water Conservation.. 54:382-389.*

McCarl B A, Blaine Metting., Rice C, (2007) *Soil carbon sequestration, Climatic Change 80:1-3*

Reilly, JM, Asadoorian, MO, (2007) *Mitigation of greenhouse gas emissions from land use: creating incentives within Greenhouse gas emissions trading systems, Climatic Change 80:173-197.*