

Garnaut Submission from Philippa Rowland, Bega NSW

Submissions - Garnaut Climate Change Review
Level 2, 1 Treasury Place
Melbourne VIC 3002

Friday 14th January 2008

Dear Professor Garnaut,

I am an agricultural scientist by training. I spent eleven years in the Commonwealth Department of Agriculture, Forestry and Fisheries (8 as a scientist in the Bureau of Rural Sciences, and 3 in the Natural Resource Management policy area. I have since moved to Bega with a young family, where I am Public Officer for Clean Energy for Eternity (see separate submission) and work intermittently as a consultant for RIRDC and Australia 21. The response below draws on my time as a bureaucrat working in NRM and agriculture and as a volunteer in Landcare, Parkcare and related activities.

General Comments

1. Inclusion of forestry and agriculture is fundamental if we are to have a hope of getting the national and global settings right. To leave these sectors out because they are difficult to include would be tantamount to setting out to fail. Difficult does not mean impossible (see 2). Such difficulties are frequently faced in agriculture (and forestry), due to the complexity of interacting elements in the landscape, the production system, the market pressures and the politics.
2. Two examples. The *National Pollutant Inventory* was initially designed to deal with point source emissions from nodes of industrial activity. It was imperative in the 1990's to make it capable of assessing diffuse and highly variable emissions from primary production. I participated in the process of setting *Matters for Targets for Biodiversity for the National Action Plan for Salinity and Water Quality* (NAP). Soil was considered 'too difficult to measure and incorporate. I was one of several scientists who fought successfully to keep soil in the equation as a vital if poorly understood component that underpins the resilience and productivity of our farming systems. It is also crucially important for carbon sequestration (eg. see C Jones <http://www.carboncoalition.com.au/>)
3. One workable approach might be to set out a matrix that attempts to define both a). management practices and b). outcomes. Measurement of both is difficult, especially in the absence of an adequately interactive (nested) dataset that is populated with real information accessible in useful format at the landholder, catchments, state and national scales. A worthwhile task, all the same.
4. In the briefing note for the 17/8/07 forum, you commented 'higher prices may increase the profitability of farming and pastoral activities in areas where yields and carrying capacities have been moderately diminished'. This raises the issue of whether and how we collectively learn to work/produce within the constraints of sustainability, particularly when the parameters are shifting and what was sustainable yesterday may no longer be sustainable tomorrow.

5. There is a crying need for the systematic promotion and adoption of **adaptive management practices**, with adequate data flows to ensure informed decision making by managers/industries/jurisdictions on the thresholds of maintaining ecological resilience in our production systems. We risk entering uncharted territory with ecological feedback loops, eg. recent reports of increasing acidity in the Murray Darling system under low water flows over acid-sulfate soils.
6. The national debate on '**ecosystems services**' has identified the importance of ensuring that consideration of climate change and schemes set up to pay for climate sequestration do not distort or overwhelm consideration of the other crucial (and interacting) elements of a functioning habitable planet – including but not only water, nutrients, vegetation and biodiversity.
7. These issues are worth considering in the light of the recent Proceedings of the National Academy of Sciences paper (Canadell *et al.* 2007), which sounds a warning bell that global carbon sinks are beginning to falter. According to lead author, Executive Director of the Global Carbon Project, Dr Pep Canadell, "What we are seeing is a decrease in the planet's ability to absorb carbon emissions due to human activity. Fifty years ago, for every tonne of CO₂ emitted, 600kg were removed by land and ocean sinks. However, in 2006, only 550kg were removed per tonne and that amount is falling." The acceleration of CO₂ growth is due to three factors:
 - global economic growth;
 - the world's economy becoming more carbon intense (ie., since 2000 more carbon is being emitted to produce each dollar of global wealth); and
 - a deterioration in the land and oceans' ability to absorb carbon from the atmosphere at the required rate.
8. Paying landholders and natural resource managers for wise management of our common resources seems eminently sensible if we want to retain a productive ecosystem that is able to withstand the rigours of adaptation under the various climate change scenarios being put forward. The key is finding mechanisms that distort neither the market nor the ecosystems that underpin them.
9. The international trade issue is contentious – there is already a trend towards certification of sustainable production. Australian rural industries have done a significant amount of work in this area, but progress has slowed in the absence of national leadership and proper long-term investment in regional/national coordination and extension. Australia 21 put forward a proposal in 2005 for the development of a national certification process (Australia 21 2005).
10. Incentives and disincentives will no doubt be needed to encourage behaviour change. The United States Multi-State Working Group on Environmental Management Systems (EMS) recognises that only a small proportion of human impacts on the environment are covered by environmental laws, concluding with the need to include both regulation/legislation and voluntary action when attempting to achieve whole-of-landscape outcomes. A raft of innovative work is underway to encourage voluntary action across a wide range of industries, but progress in Australia has been slowed by a lack of national coordination (see points 7 & 8, Rowland 2005, Australia 21 2005).

11. Benefits of building on international and aid links, specifically APEC Agricultural Technological Cooperation, ACIAR and AusAid projects across the region to help secure the livelihoods and production systems of our neighbours. It will be in the long term security interests of the entire region to extend and encourage the existing assistance network, as flagged under the proposed climate-related aid package proposed by the new Federal government.
12. The sum of the parts is greater than the whole – it is hard to be sure of which elements of global ecosystems we can or cannot do without. Stern’s message was that the costs of inaction easily outweighed the 1% GDP deemed necessary to take action quickly enough to make a difference. Blessed with a rare opportune coincidence of willing State and Federal governments, perhaps the hardest task is now working out a priority list for action and distinguishing truly valuable actions from merely ‘green paint’ cosmetic changes.

As we near potentially irreversible turning points in this phase of the earth’s history, those humans with the intelligence to understand the urgency and the capacity to take action, must move swiftly but carefully to make the best use of the world’s resources to sustain the world’s resources for future generations – ‘of all living beings’.

Specific Brief Comments on Questions for consideration:

3.1 Adaptation

Please consider including the role of systems approaches and adaptive management. As mentioned above, access to information in a suitable format at the appropriate scale hampers informed decision making – there is also a continued need for further work on extension to promote uptake of existing research outcomes. Partnership approaches with shared responsibilities are likely to be the best model.

3.2 Mitigation options

There are significant opportunities for agriculture and forestry to contribute substantially to the national mitigation effort. Positive suggestions include creating a network of exemplary community projects and disseminating examples of creative community solutions. I believe there is great merit in further developing rural/urban collaboration to collectively tackle mitigation. Australia could take a leaf out of LEAF UK’s book in generating and promoting strong links between urban and rural communities <http://www.leafuk.org/leaf/>

3.3 Practical considerations

There is significant complexity in establishing a system that is internationally consistent yet addresses Australia’s unique diversity and requirements.

Box 3.3 – can I sound a note of caution about minimum tillage? Care need to be taken about the level of herbicide use built into our farming systems, given international (and Australian) research showing the potential for contamination of groundwater with mobile triazines in particular. This is even more of an issue in situations where as a country we may become ever more reliant on historic groundwater resources.

Monitoring, reporting and verification requirements – this is an excellent question. Worth knowing that the existing substantial effort in establish a national monitoring and evaluation framework has already experienced difficulties across different scales, industries and jurisdictions. This relates to my earlier point about nested datasets.

Yes, I believe all agriculture and forestry sub- sectors should be included. Please do not postpone work on agriculture and forestry until the Emission Trading Scheme has been developed. Hard work at this point will repay considerable benefits in the future.

It is crucial that your report take into account the **opportunity costs** of delaying Australia's response to the challenge of climate change. NOT TAKING ADEQUATE ACTION on climate change now is likely to incur highly undesirable future costs, not only in economic terms but in social and ecological disruption.

3.4 Role for Forests in carbon sequestration

Gullison *et al.* (2007) provided sound scientific evidence for the need to rapidly reduce deforestation and maintain the capacity of forests to act as carbon sinks, noting the importance of preventing global warming levels that could slow the ability of forests to accumulate carbon. Earlier research in Tumbarumba showed Australian dry sclerophyll forests under drought conditions actually emit rather than sequester CO₂.

In Conclusion

Being aware of your earlier work while I as employed by BRS, I confess to breathing a sigh of relief when I heard the ABC interview in which you accepted the challenge given you by then Opposition leader Kevin Rudd. Now that he is our Prime Minister, you have a unique opportunity to be bold and creative in your suggestions.

I look forward to contributing as best I can to further Issues Papers. I wish you and your team the best of luck and the Wisdom of Solomon in your deliberations.

References

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