

## Submission to Garnaut Climate Change Review on Issues Paper 1 – Climate Change: Land use – Agriculture and Forestry

### A submission from John Barnes (Ballarat, VIC 3350)

#### Water as important as carbon

Issues Paper 1 concerns itself directly with consideration of how the agriculture and forestry sectors contribute toward climate change, what contribution they might make toward fixing carbon, and whether the introduction of an Emissions Trading Scheme (ETS) is practical for these sectors. Reduction in gasses that exacerbate climate change is essential. However, I am concerned that by placing emphasis on the processes by which greenhouse gas emission reductions will be achieved (via an ETS), that other related aspects of climate change impacts upon the agriculture and forestry sectors are given too little consideration. You may appreciate that with the river flow predictions for the next 50–years now provided for Victoria by the CSIRO that the issue of what water is available and how it is best used is fundamental. Agricultural and forestry production comes at a water cost that is material to the sort of economy we might wish to operate in Victoria in the decades ahead.

The following points are worth noting:

- In an average year, 77% of Victoria's total water consumption is in irrigation agriculture (this compares with 70% nationally).
- A further 6% goes on domestic and stock consumption. *–Source National Land and Water Audit 2000*
- In Victoria, around 60% of all irrigation water grows grass, mostly for consumption by cattle for dairy and beef production.
- Around 50% of Australia's dairy produce is exported, earning around \$2.5b annually. The figure for Victoria is higher, ironically, considering the embodied water involved in its production, with much exported as milk powder.
- Two-thirds of agricultural production in Australia is exported.
- The contributions of agriculture and forestry to Australian GDP are 3% and 1% respectively.

- Australia's rainfall patterns over the past 40-years show that the northwest of the continent is becoming wetter, whilst the southeast is becoming dryer.
- The areas formerly defined by Goyder's Line (<254mm annual rainfall), representing the point beyond which agriculture in southeast Australia is unviable is encroaching toward the southeast.

These points alone suggest that the economic significance of agriculture and forestry in the southeast of Australia are already being reduced by the climate change impacts now being felt. These will exacerbate before they can be halted, assuming that a suitable policy mix can be devised to achieve a halt globally. In other words, because of their reliance on available water, agriculture and forestry are already facing substantial changes. When one takes into account the further changes that will occur over the coming decades, regardless of whether or not this includes an ETS, it is incumbent to devise a policy mix which takes into account the social and environmental impacts of change, as well as the economic.

### **Rural resistance to water trading to urban areas**

The figures provided in the Issues Paper show agriculture was responsible for 16.8% of Australia's greenhouse gas emissions in 2005, or 23% if energy and transport directly related to agriculture is included, and that some 60% of these gasses are from enteric fermentation (belching and farting by ruminant animals, mostly cattle and sheep) and from their rotting manure. Combined with the figures quoted on page one of this submission, the case against continued use of land and water in southeast Australia for beef and dairy on irrigated pasture to support an export industry with modest income generating capacity seems overwhelming. The future of irrigated agriculture in Australia appears to lie to the northwest of the continent, and probably as a plant-based industrialised sector rather than one focused on smallholdings and animal husbandry. But nothing is quite that simple. Dairy farmers are part of communities and local economies. These communities are feisty about what they have and what they are and are not prepared to give up. The reaction

of the Plug the Pipe Coalition to the Food Bowl Modernisation Project is a case in point. The investment of \$1b in Stage 1 of the piping of open irrigation channels to save 225 GL of water currently lost to seepage and evaporation, where the beneficiaries are irrigators, the environment and Melbourne with 75GL each. Of the \$1b, only \$100m is to come directly from farmers. The rest is to be paid by Victorian taxpayers and Melbourne water ratepayers. The Plug the Pipe Coalition are marshalling a campaign to stop the transfer of water, but not money the other way, and are marketing their cause as one of water theft and urban populations impinging upon their livelihoods. It remains to be seen how resolute the Victorian government will be on the matter. It is fair to say that there is considerable sympathy for the farmers by many urban dwellers, who do not understand the National Water Initiative (NWI) water trading mechanism, that the water is not currently available to farmers, nor appreciate that it is they, the urban dwellers of Melbourne, who are substantially paying for the entire initiative in question.

### **Lessons from the water market**

The experience with the Food Bowl Modernisation Project shows that it is extremely difficult to bring about change. There is a COAG/NWI policy that has been in place for the last thirteen years to subject water to the rigours of a market approach, in the hope that water will flow to the highest value end user. If this were the case, Melbourne would have its water without need for most of the \$900m investment in piping open irrigation channels in the Goulburn–Broken districts. It would simply buy water on the market and build the Sugarloaf Interconnect.

The point of this long-winded example for water is that a similar time lag cannot be tolerated in tackling climate change as has occurred with the market mechanisms introduced to generate change in the water sector. A second point is that even with enlightened policy looking to compensate those subjected to change, that it is an extremely difficult solution to sell. Farmers enjoy a status with the Australian public that far exceeds their contribution to the Australian economy, and substantial rural change is a vexed political issue. They have no

qualms about asserting their self-interests through farmer bodies and the National Party.

Change must occur in agriculture, toward higher value uses of water than pasture growing (and the unabated greenhouse gas production in the guts of the animals eating that pasture), and opportunities for alternate ways in which farmers might continue to make a living and contribute to the viability of the communities to which they belong. A shift to horticulture can generate jobs and wealth with relatively modest amounts of water compared to animal husbandry on irrigated pasture. The current scenario of orchardists abandoning their trees within the Murray Darling Basin, whilst pasture is still being grown for dairy herds nearby, shows what perverse outcomes can be produced, when there is not a real market for horticulturalists to sell into. Australian supermarkets are doing no one any long-term favours through price inflexibilities that fail to recognise the impacts of the environment on their suppliers. This needs to be fixed if we are to enjoy secure and affordable food in future. Beyond agriculture, some of the water they previously used will come to urban communities for use by industry to employ orders of magnitude more people, and to generate greater wealth for the economy.

Forestry has the potential to fix carbon, but in so doing will use a lot of water. Growing plantations do not shed a lot of water. Their location away from critical catchments is encouraged. They can also represent problems for water quality in reservoirs when they catch fire, as they sometimes do. It is noted that the New Zealand proposed ETS includes a liability “for any change in carbon stock, including loss through fire, storm or harvesting”. Perhaps a whole new range of insurance products will come onto the market! One wonders how much litigation will take place as a result of a wildfire starting in government managed forests and spreading to privately developed carbon sinks if the New Zealand model is followed. –It could prove prohibitively expensive for state governments.

An ETS will not be successful alone in bringing about the types of changes needed in forestry and agriculture to make a significant contribution to addressing climate change without a number of complementary policies built on the following assumptions:

- Urgent need for change
- Targets set assuming proven technologies
- Constrained consumptive use of water
- Landscape reclamation
- Maintaining human dignity

### **Urgent Need for Change**

This needs to address how to bring about greenhouse gas reductions. It also needs to address how to adapt to the changed conditions resulting from climate change. (For agriculture and forestry a key impact of climate change is reduced availability and reliability of water.)

The urgency of the need for change on both fronts will need to be marketed to people, and a range of policies that induce people toward voluntarily shifting their behaviour, or at the least compensating them for their losses, will need to be put in place. A rural land stewardship program to keep rural people on their properties to implement an agreed upon landscape regeneration program as an alternative to drought assistance or to the brute forces of the market, is a possibility mentioned further below.

### **Targets Set Assuming Proven Technologies**

Promises of clean coal technologies, of gut bacteria that will reduce methane production resulting from enteric fermentation, and similar hoped for innovations that will allow us to continue our current practices are aspirations. They are not the assumptions upon which to build a response to global warming, which is here and now. Of course research on these and other new technologies should be continued and supported, but the plan to tackle Australia's climate change response needs to be conservative. It needs to be conservative in relation to the climate change models currently receiving consensus.

Past modelling has been repeatedly reassessed as too optimistic. We should not be so arrogant as to imagine that we now have our models right. (This was the experience in the development of water policy in Victoria, where substantial changes in the assumptions about the impacts of global warming were made over the last three-years, initially in Our Water Our Future, then a rethink in the Central Sustainable Water Strategy, and again in Securing Water for Melbourne. Each time the actions became more urgent and more expensive.) Any future technological breakthrough to improve greenhouse performance should be considered a buffer against our ignorance of the challenges that lie ahead. It is noted that geothermal, solar and wind generation are considered proven, as is small-scale geo-sequestration of carbon dioxide, though all need to be realistically assessed.

### **Constrained Consumptive Use of Water**

The future for most Australians, those living on the eastern seaboard, is one with considerably less consumptive water available. Current policy of allowing the market to determine where water gives the best returns in the economy is sound; it just needs to be implemented. It requires political resolve. It also requires continued investments in building pipes and pumps to create a water grid that allows water to be shifted around. Any large urban area near an irrigation district has no excuse for running out of water, unless the irrigation district is completely dry. For those cities of the coast, desalination is an added security, though an expensive one compared to irrigation water, if available, and a heavy producer of greenhouse gasses.

Recognition of a water constrained future poses questions about the potential of bioenergy sources, such as ethanol, biodiesel and biomass power generation. To the extent that all embody water, they are considered to be of limited value in future, though almost certainly part of a mix of energy sources, particularly those derived from recycling wastes.

## **Landscape Reclamation**

Under the climate change trends obvious in Australia's rainfall patterns already, substantial areas of Australia's agricultural land needs to be retired. Other land needs to be used differently to past use. The Australian landscape has been managed since aboriginal settlement. The rigours of agricultural use and climate change upon the land demand an on-going response to restore and buffer the land against the weather of the future. (It should be noted that restoration of the environment to a real or imagined past standard may be unrealizable, due to a permanent shift in climate, and could involve the active intervention of people to help with plant migration and creation of habitat that would otherwise not happen.) A mix of regulation and incentives should be devised to ensure these changes happen quickly. Some sound science is also required.

## **Maintaining Human Dignity**

Rural and regional Australia should not be abandoned. Nor should its people bear a disproportionate burden of the changes necessary to meet the challenges of climate change. They can fulfil an important role by being given the chance to stay in their local communities and become the architects of local change. An additional source of income for farmers should be a land stewardship payment to all farms that adopt an approved landscape plan for their properties, which are carbon credit accountable, and which provide auditable carbon sinks, providing either tax credits or income streams as trailing commissions (for as long as sequestered carbon stays fixed). Such landscape plans need not be plantation monocultures; they should in fact nurture biodiversity. Such a scheme is intended to help farmers with the transition from current farming to sustainable land use into the future. Where farmers choose not to participate in such schemes, they would disqualify themselves from government support such as drought relief and other industry subsidies.

The case for significant and prompt action relating to climate change responses concerning the agriculture and forestry sectors is strong

domestically, because of the interrelationship these sectors have with urban communities and the broader economy, especially through their uses of water. The impetus for substantial change is already with us. Structured change that comprises both market mechanisms and government intervention sets us up for a stronger economy and at the same time prepares us better to meet the challenges of global warming. It can provide a safety net to those who would otherwise be the victims of that change. The longer we delay devising a clear course of action the less time we leave for its implementation.

John Barnes