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The Secretary
Agriculture, Resources, Fisheries and Forestry Committee
House of Representatives
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RE: AFG SUBMISSION TO THE INQUIRY INTO THE AUSTRALIAN FORESTRY INDUSTRY

Introduction

Australian Forest Growers (AFG) is the national association representing around 1200 private forest growers from 24 regional branches across Australia's forest growing regions. AFG's members include farm plantation growers, private native forest managers and private commercial plantation companies predominantly focussed on timber products. Founded in 1969, AFG has for over forty years, advocated responsible establishment and management of forests on private land providing the multiple outcomes that the community increasingly demands. The growing of commercial plantations and sustainable active management of private native forests by our members has been delivering improved landscape health outcomes for decades, as well as complementing existing productive land use practices.

AFG welcomes the opportunity to provide a submission to the inquiry into the Australian Forestry Industry. Forestry is an industry subject to intense scrutiny and is a misunderstood sector. However, with a growing population the demand for timber products in Australia has continued to increase and there are no reasons why this trend will not be maintained. While the terms of reference seem to be focussed on plantation forestry, with relegation of farm forestry to the last dot point, AFG's submission will outline how the benefits of farm forestry are relevant under the various headings which constitute the terms of reference.

AFG's submission will also address the benefits of actively managing private native forests. It should be noted that about one third of the wood volume harvested for industrial use is still sourced from native forests and this cannot be replaced by the current limited plantation estate.[1]

Background

Forestry policy in Australia has traditionally been concerned with wood supply, but that emphasis is now increasingly balanced with environmental management and community development objectives. Shifts in government environmental policy in the late 1970s ultimately gave rise to the *National Forest Policy Statement* (1992), which envisaged significant changes in management of native forests, together with renewed emphasis on plantation and farm forestry development. The core

[1] Department of Agriculture, Fisheries and Forestry, *Australia's forests at a glance 2010*, Bureau of Rural Sciences, Department of Agriculture, Fisheries and Forestry, Canberra, 2010, p. 47.

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framework driving this policy shift was ecologically sustainable forest management (ESFM) – the management of forests for all their values. This was derived from international agreements signed by Australia following the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992. Additional policy impetus was given to plantation growth by the development of *Plantations for Australia: The 2020 Vision* (1997), with renewed support for a revised version of this initiative given by all levels of government in 2002.

In the past decades there has been a continual decline in the hardwood resource obtainable from the public native forest estate. The quality of the timber from the small public native forest pockets available for production is beginning to decline in quality. Recent further restrictions to the available areas particularly in Tasmania under the Tasmanian Community Forest Agreement 2004, and the current "statement of principles" debate, if implemented, may further exacerbate this. In terms of softwood sawlogs, there has been only a modest expansion in supply from existing plantations over the past decade. This is now confronting the processing sector with predictions of substantial supply gaps at a time when the Australian processing industry's recent investment in larger more efficient world scale mills and markets are causing demand for greater resource availability.

In addition, expansion of the plantation estate as proposed by *Plantations for Australia: The 2020 Vision* has stalled. The current estate is 1 million hectares short of the 3 million hectare target sought by 2020. Expansion has mostly occurred in short-rotation hardwood plantations for pulp, with little to no plantation expansion occurring elsewhere for a non-pulp resource, i.e. long rotation plantations, as greenfields resource.

Australia's growing population is creating an increasing demand for timber products. This increased demand coupled with reduced supply (and quality) of the public native forest resource, raises the question: where will the long-rotation hardwood resource come from? The disincentives in the taxation regime, inherent sovereign risk and long time frames, the loss of Private Forestry Development Committees (PFDCs) compounded by the loss of government farm forestry extension and technical support services means that private landholders are ill-equipped and have little incentive to partake in meeting Australia's timber needs.

Farm forestry, including the management of private native forests, is a means to supplement industrial scale timber production, while addressing local and regional land use sustainability. Government commitment and support to farm forestry would provide landholders with an opportunity to help meet Australia's timber needs into the future as opposed to these needs being met through importation of timber products which are potentially illegally harvested.

Farm forestry - the integration of trees and farming - has a crucial role to play in the future of both agricultural and forestry industries. It is widely accepted, and there is good data to confirm that farm forestry can protect soils from wind and water erosion, use excess groundwater, improve biodiversity and sequester carbon. Farm forestry has the potential to provide the resources for new and expanded industries, with the associated benefits of income diversification and new jobs in regional areas.

The importance of farm forestry was recently noted by the United Nations Food and Agriculture Organisation (FAO). It stated that 'small holder' plantations or on-farm plantings, typically less than five hectares in size, "nearly match the global plantation area established by state forestry agencies and are almost double the area of plantations established around the world by corporate groups" (Appendix 1).[2]

Further, it is useful to contemplate attitudes to forestry internationally, especially in Europe where productive forests are highly valued as community assets. As an example, in Finland private forests are available as community assets for camping, recreation, hunting and collecting berries and the like. The biodiversity values are also recognised in a manner whereby the forest owner is charged with a duty of care to protect and maintain environmental values to a specified level. Once the level of protection exceeds the duty of care then payments for protection beyond that are made by the community (through government programs). (This duty of care concept is recognised in the Tasmanian Forest Practices system but getting payment once the threshold percentage is breached is very difficult). Similar mechanisms are available or being developed in other European countries. Scandinavia is the spiritual home of farm forestry with a significant amount of the resource being accessed from small allotments, major international processing companies being created as grower cooperatives (though now major listed companies in some cases) including Sodra, Noske Skog and Metsalito. Again in Finland some 40% of the population have a direct proprietal interest in a forest. In the context of utilisation of the resource for bioenergy, wood products are a major source of energy for heat and electricity. The key point is that all of these outcomes are made possible by sensible and supportive government policy encouraging forest development and utilisation together with a supportive community.

Farm forestry has the capability to address Australia's timber needs into the future, while addressing land degradation issues and carbon sequestration targets. There is no reason why these needs and targets should be mutually exclusive. What is needed from government and decision makers is support for the sector, including educating communities about the benefits of farm forestry. Further, providing landholders with the necessary extension and technical support services to either integrate plantations onto their property or sustainably manage their private native forest resource is crucial for industry integrity and community support for the sector.

Summary of Recommendations

AFG's submission makes the following recommendations:

1. AFG seeks the delivery of education and training in silvicultural and environmental management of native forests, for private forest owners and managers extending to the development of property management plans that include the expansion of commercial native forest onto previously cleared land.
2. AFG seeks a focus by government on facilitating the development of industries, markets and mechanisms for all products of a forest rotation and

[2] D Lamb, 'Changing the standard model of reforestation across the Asia-Pacific', *Australian Forest Grower*, Autumn 2011, pp. 37-38.

on assisting small-scale grower participation, particularly where such assistance would address market failure and support 'public good' outcomes.

3. AFG advocates for the continued availability of the Australian Pine Log Price Index (APLPI) and development of a similar index for hardwood.
4. AFG seeks that the environmental services provided by plantations and native forests are recognised and rewarded in market based frameworks, alongside commercial benefits. These should include, but not be limited to, their role in mitigating salinity, promoting biodiversity, improving land, air and water quality and quantity and contributing to aesthetic and amenity values.
5. AFG seeks the development of useable, transparent rules and market systems that allow all forest growers (including small-scale growers) to access and participate in environmental services markets.
6. AFG seeks a commitment by Federal, State and Territory Governments to maximising opportunities to develop public-private partnership investment in farm and plantation forestry. This can be achieved through land management planning that matches enterprise development with improved environmental and productivity outcomes.
7. AFG seeks equitable and evidence based treatment of plantations in the water debate, recognising that plantation forests in Australia are generally a non-irrigated crop.
8. AFG seeks provision of grants, greater than 100% tax deductibility, stewardship payments and the creation of environmental services markets in order to create a better business environment for farm forestry.
9. AFG seeks recognition of legitimate forestry production purposes and associated activities, including sustainable timber harvesting, as existing and continuing lawful use of naturally afforested private agricultural landholdings.
10. AFG seeks Australian Government recognition that amending the tax rule applying to superannuation and biophysical self-generating assets (such as private forests) can help achieve its retirement policy objectives.
11. AFG seeks a Farm Management Deposit Scheme (or equivalent) that recognises and accommodates the unique characteristics of private forests and does not discriminate against forest growers.
12. AFG seeks that the Bureau of Rural Sciences (BRS) is maintained as the principle, centralised organisation for researching, preparing and disseminating information relating to the environmental and socio-economic aspects of forest and timber industries in Australia. Further, AFG seeks the scope of BRS be broadened to include reporting on the socio-economic and environmental benefits and impacts of sustainable private native forest management.
13. AFG seeks that government work with the forest industry and representative organisations to assist in promoting forestry and timber products to both regional and urban communities, recognising the important role that forestry has in contributing to the triple bottom line in rural areas.
14. AFG seeks government support for the development of regionally based biofuel production plants combined with the production of biochar to utilise resource from forest and wood processor residues and crop residues, as well as from short rotation biomass crops.

15. AFG supports the development of greater integrity in the firewood industry, achieved through educating landholders about best practice management.
16. AFG seeks inclusion in the CFI of carbon stored in harvested wood products from the scheme's commencement, including wood, paper and carbon stored in long-life landfill or as biochar incorporated into agricultural or forest soils.
17. AFG does not support plantations for permanent carbon storage.
18. AFG seeks increased understanding of complementary strategies involving agriculture, forestry and farm forestry, and of desirable opportunities for mutual land use benefits, including environmental and natural resource protection, commercial sustainability and on-farm energy and greenhouse gas management.
19. AFG advocates a strong focus on the utilisation of integrated forestry for multiple outcomes that includes:
    - proactive repair of riparian landscapes to improve water quality and river health, both insitu and downstream thereby benefiting ecology, fisheries and downstream assets like the Great Barrier Reef;
    - positive and community friendly responses to climate change by using productive forests as carbon sequesters;
    - managing salinity, especially to maintain or re-establish potable water supplies;
    - enhancing biodiversity and ecosystem resilience;
    - production of sustainable forest products; and
    - provision of sustainable sources of biomass for renewable fuels and electricity.

Please note: Throughout AFG's submission there are references made to AFG's Policy Statement booklet – 4th Edition. The referenced Policy Statements are attached at the end of the submission: Appendix 2.

Opportunities for and constraints upon production

The opportunities for and constraints upon production are many and varied. The impacts of ill-founded public opinion can restrict the sustainable utilisation of the private native forest resource for timber production. Opportunities for production will come from educating landholders about the benefits of actively and sustainably managing their native forest, or encouraging them to adopt sustainable land management practices through planting trees. Thus the continued reduction in government provision of extension and technical support services has acted as a constraint on production from the private native forest resource, and the uptake of farm forestry. Lastly, the most important element for production is market access. This can prove challenging for those farm foresters who have a small pocket of resource in a geographically isolated region.

Private Native Forestry (**AFG Policy Statement #3**)

There is a general trend of decline for hardwood timber supplied from public native forests. This resource will either need to be sourced elsewhere (including from privately held native forests), substituted from a yet to be established long rotation hardwood plantation estate or imported (potentially from suspect sources and at a cost to Australia's balance of trade).

Private native forestry is, or can be readily integrated into agricultural systems through property management plans. Property management plans (PMP) reflect the landowner's long term goals for the property. They are the landowner's plan of what they consider needs to be done to meet their economic and environmental aspirations. Landowners who take a long term view are usually keen to address problems such as soil erosion, loss of biodiversity, declining health of native vegetation and lack of shelter. It has been clearly demonstrated that trees as part of a farming system can help to overcome these problems.

Unfortunately, low awareness of the nature, management needs and potential of private native forest resources, coupled with intergenerational loss (or non-existence) of a forestry culture and associated skills among landholders, means that much of the private native resource suffers from suboptimal management and utilisation. Private native forests require skilful nurturing and management to realise their highly productive potential and to provide a broad basket of environmental services, sustainable natural resources and commercial products.

Restoration and development of the private native forest resource (through active management) on an ecologically sustainable management basis is fundamentally dependent on access to a full range of markets for all native forest products. Without commercial viability (sometimes referred to as market pull-through) these forests will continue to be unhealthy through neglect and poor utilisation and are likely to degrade further. As a result, neither their owners nor the community at large will be convinced that private native forests are highly desirable assets to be managed and valued accordingly. The notion that preserving (locking up) these forests protects or enhances their health is scientifically unsound. They need to be nurtured and managed to achieve a healthy vibrant and productive resource, and thus be truly valued.

This argument is supported by the publication *Fifteen Years of Joint Venture Agroforestry Program*. There are ten key messages summarising the document and the future of the farm forestry sector. Key message number four states that: "The 38 million hectares of private native forests (PNF) have significant potential to augment diminishing hardwood sawlog supplies from public native forests. Enhancing research into the biodiversity outcomes of good silvicultural management, combined with development of metrics to underpin markets in environmental services from PNF will assist in realising their potential".[3] Thus there is a role for government in the provision of extension and technical support services to educate landholders about the capability of their private native forest resource. This service is currently non-existent in most (all?) states.

Farm forestry and market access (**AFG Policy Statements #13, #14, #15**)
Farm forestry can deliver a multitude of benefits however one significant hindrance to its uptake is access to markets. Hence, there is a great opportunity for expansion of the farm forestry estate through assisting landowners to learn the necessary skills to integrate trees onto their property, or to manage native forests for timber.

[3] J Powell, Fifteen Years of the Joint Venture Agroforestry Program, *Rural Industries Research and Development Corporation*, 2009, Publication No. 09/063, p. viii.

However, to capitalise on a return for their timber product, they require access to markets which can prove difficult with geographic isolation, particularly from processing infrastructure. Where established industry exists, farm foresters generally have access to these markets, and thus can grow species which match the local market.

There does however remain an issue with transparent access to many markets where the supply is dominated by one or only a few large suppliers, often these are state government organisations. While there has been some progress towards 'opening up' the price discovery of softwood resources (via the Australian Pine Log Price Index) and there is competition for resource in some (but not all) regions for plantation pulpwood, the process of price determination and discovery in the native hardwood sector remains at best a mystery to many. To effectively drive greater confidence in management of private native forests there is an urgent need for native hardwood price indicators to be available to assist farmers in the planning needed to make the decision to manage their forests for timber outcomes. The absence of this price information significantly underpins the insufficient management (in a spatial sense) of this resource leaving the industry unnecessarily undersupplied. These issues and further information on market signals for the forestry sector have been published in the report *Impediments to Investment in Long Rotation Timber Plantations*.[4]

As stated in *Fifteen Years of the Joint Venture Agroforestry Program*: "there are significant potential for farm forestry in medium to low rainfall areas, but there are a number of long-standing 'deal breaking' issues preventing its realisation. These issues include lower growth rates, less-established forestry infrastructure, and, depending on product form and value, greater distances to markets". However for high rainfall areas (rainfall greater than 600mm per annum) it was identified that "profitability of farm forestry is currently marginal, mainly due to lack of developed markets for prunings, thinnings, and for the environmental benefits that farm forestry can generate".[5] Further, there are opportunities to be explored that include utilisation of forest biomass for bioenergy.

Addressing these issues will assist in the profitability of a farm forestry venture thus increasing the opportunities for timber production in the regional landscape.

Recommendations

1. **AFG seeks the delivery of education and training in silvicultural and environmental management of native forests, for private forest owners and managers extending to the development of property management plans that include the expansion of commercial native forest onto previously cleared land.**
2. **AFG seeks a focus by government on facilitating the development of industries, markets and mechanisms for all products of a forest rotation and**

[4]Forest and Wood Products Research and Development Corporation, 'Impediments to Investment in Long Rotation Timber Plantations', report prepared by M Kelly, J Tredinnick, G Cutbush & G. Martin, Department of Agriculture, Fisheries and Forestry, Canberra, 2005, pp. 42-44.

[5] J Powell, op. cit., p. 32.

on assisting small-scale grower participation, particularly where such assistance would address market failure and support 'public good' outcomes.

3. **AFG advocates for the continued availability of the Australian Pine Log Price Index (APLPI) and development of a similar index for hardwood.**

Opportunities for diversification, value adding and product innovation

For greater uptake of farm forestry, market access is needed for all the products produced during a growing cycle. Recognising the environmental benefits of farm forestry through environmental services markets, and establishing markets for bioenergy through the utilisation of thinnings, are two opportunities for market diversification.

Environmental Services Markets (**AFG Policy Statement #4**)

Due to the flexible nature of farm forestry it is most adept at improving the environmental integrity of the landscape, and a healthy environment is well recognised as being an important component which underpins a healthy community.

The creation of environmental services markets can provide an important link between the environment, society and the economy, which is the key to sustainable development within the rural landscape. AFG acknowledges that the design of environmental services markets is not without challenges. One important challenge is how public benefits from land use change can be captured as a 'commodity' suitable for trade or purchase and by whom.

The creation of environmental services markets needs to be researched, designed and co-ordinated between State and Federal Governments, whose responsibility will be to provide a robust framework, and landholders who have the means to provide this service. The government (on behalf of the community), philanthropists and corporations seeking to enhance community service or some other obligation and others may also participate in these markets, but this is a separate process to the design and facilitation of such frameworks.

In recent years, significant advances have been made in the development of more sophisticated tools for capturing the value of community services. Carbon trading mechanisms are one example, however there have been and are challenges in the design principles. Both the Carbon Pollution Reduction Scheme (CPRS), and to a lesser extent the Carbon Farming Initiative (CFI), provide a practical example of how sensible consultation between government and industry can develop trading frameworks. It also sadly demonstrates the difficulties in designing frameworks to concurrently meet 'community needs' and industry needs. The development of trading frameworks has proved quite difficult for carbon which is definable and confined to a particular plant and property, despite its apparent overwhelming community acceptance. It will no doubt prove to be more complex in utilising market based instruments to value, define and achieve other targeted biophysical outcomes such as water quality and quantity, and biodiversity enhancement. However, in New York the forests are managed to produce high-quality drinking water. The

management and protection of these forests was favoured over building more treatment plants.[6]

Forestry returns deep rooted perennial vegetation into the rural landscape in various forms, including in managed stands and native vegetation. Knowledge and understanding of the role that forestry plays in simultaneously addressing a variety of natural resource management issues is becoming more widely understood. For example, appropriately located trees can contribute to reducing salinity by controlling water table fluctuations. Trees contribute to soil management by reducing erosion and acidification, and enhance water quality and wastewater management through filtration. Additionally, biodiversity can be boosted by creating or maintaining, linking and restoring forest habitat. Farm forestry is therefore an important natural resource management tool, yet the environmental services that farm forestry can provide have yet to receive broadscale recognition in Australia.

It is well understood that one of the major factors driving land use decisions and the adoption of environmental management strategies are financial incentives and returns. Financial security and opportunity in environmentally targeted forest management activities improve the likelihood of environmental awareness being transformed into action and achievement of environmental outcomes on a broad regional scale.

A well-designed and managed farm forestry enterprise generates environmental and socio-economic benefits that flow through to the wider community. These environmental services are public goods, and it is imperative that more direct ways be found of communicating the value to the community. To date, consumers have demonstrated only limited willingness to pay for these services in the price of wood and paper products. In any event, it is too restrictive to place the financial burden of all services solely on individuals who will not reap exclusive benefits.

It was recognised in the publication *Fifteen Years of the Joint Venture Agroforestry Program* that "MBIs [market based instruments] appear to have particular value in three contexts: for PNF [private native forest] management where there are commercial trade-offs associated with meeting community expectations and standards for biodiversity conservation; where off-farm salinity impacts are severe and farm forestry can deliver net benefits in terms of reducing salt concentration of streams while maintaining desired runoff volumes; and for remnant native vegetation managed primarily for biodiversity conservation outcomes".[7] Thus these areas are where state and federal governments could support the development of environmental services markets.

The opportunities for market diversification through the support and establishment of bioenergy markets are addressed under the relevant heading later in this submission.

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[6] S Stolton & N Dudley, *Managing forests for cleaner water for urban populations*, Food and Agriculture Organisation of the United Nations, 2007, viewed 29 March 2011, <http://www.fao.org/docrep/010/a1598e/a1598e10.htm>.

[7] J Powell, op. cit., p. 68.

Recommendations

4. **AFG seeks that the environmental services provided by plantations and native forests are recognised and rewarded in market based frameworks, alongside commercial benefits. These should include, but not be limited to, their role in mitigating salinity, promoting biodiversity, improving land, air and water quality and quantity and contributing to aesthetic and amenity values.**
5. **AFG seeks the development of useable, transparent rules and market systems that allow all forest growers (including small-scale growers) to access and participate in environmental services markets.**

Environmental impacts of forestry, including:

- **Impacts of plantations upon land and water availability for agriculture.**
- **The development of win-win outcomes in balancing environmental costs with economic opportunities.**

(**AFG Policy Statements #5 and #18**)

The environmental benefits of forestry are well-understood, particularly for the farm forestry sector. While forestry can take many forms: plantations; managed native forests; it is farm forestry which is most capable of complementing and benefiting agriculture. Thus there are only environmental benefits if farm forestry is implemented well, which also contributes to economic opportunities.

Environmental benefits from farm forestry are achieved through an integrated system of forest management, where trees are included into the landscape for a plethora of benefits based on a landholders property management plan (PMP). This integrated approach is well-recognised for its ability to enhance agricultural productivity while addressing environmental land degradation issues: "The Murray-Darling Basin Commission believes farm forestry, integrated with traditional agricultural practices, will fill a substantial role in addressing a variety of land and water degradation issues".[8]

Work carried out with farmers across Australia over the past two decades show that trees can be incorporated into farming in ways that enhance rather than displace current enterprises – for example, trees planted in belts. The challenge is to extend that experience and knowledge to other farmers so they are able to incorporate farm forestry with their farming operations to help them achieve their long-term goals.

The benefits which can be obtained from farm forestry can be manipulated depending on species planted and in what configuration. Indigenous species can be planted for habitat connectivity, while also addressing salinity and erosion issues. This is the case in Western Australia where a group of landholders have planted approximately 12,000 ha of oil mallees to address salinity and erosion. The oil mallees are deep rooted perennials that ameliorate salinity and prevent wind

[8] D Race & A Curtis, 'Farm forestry in Australia: review of a national program', *Agroforestry Systems*, 1996, vol. 34, pp. 179-192.

erosion. The landholders report increased productivity in their crops and livestock as a result of their initiative.

AFG recently published *Recreating the Country* a blueprint for the design of sustainable landscapes.[9] The publication encourages biologically rich plantings as part of adopting farm forestry, and has an index for sustainability which could be utilised in a MBI in encouraging farmers to plant trees.

In relation to the concern about the impact of plantations upon water availability for agriculture, this is addressed in the publication *Plantations and Water* that states: "In most places, plantations make up only small proportions of catchments. They also contribute positively to regional economies and can provide environmental benefits. With appropriate catchment selection and plantation planning and management, plantations can be a viable and positive part of the rural economy with minimal impacts on stream flow".[10]

Original native vegetation coverage in Australia kept soil water levels in balance. However, as a consequence of extensive land clearance to support agricultural production, this balance was altered and ground water levels began to rise. Agricultural land uses are now reliant upon the increased water yield that resulted from vegetation clearance, and most recent plantation establishment is on cleared agricultural land that was previously forested.

Restoration of water balance and flows should be considered in light of pre-clearance water yields. The accepted base yield should then be defined by assessment of existing land uses from environmental, economic and social perspectives, rather than assuming current clearance land uses, or unimproved pasture, as the baseline.

Strategic location of plantations in a catchment can maximise the beneficial impacts of afforestation. However, if a landscape planning approach is to be pursued, the impacts of all land uses on water yield and quality should be considered.

Forest trees along with other deep rooted perennials have water-using characteristics that are different to those for irrigated crops. Trees in plantations and native forests access water primarily through interception of rainfall via the soil, that is by accessing soil moisture and perched layers above the clay. Trees generally tend to be opportunistic water users with responsive physiological capacity for water use regulation. Consequently their water demand and use is to a large degree dependent on spatial and temporal patterns of water availability rather than according to a fixed amount. This needs to be acknowledged and carefully accommodated in mechanisms and protocols for water entitlement allocation.

Thus, the focus should be on changes in yield throughout a catchment, rather than solely the reduction of water yield resulting from specific land use changes at the

[9] S Murphy, 'Recreating the Country', Australian Forest Growers, Australia, 2009

[10] RJ Keenan, A Gerrand , S Nambiar, M Parsons, *Plantations and Water*, Bureau of Rural Sciences, Department of Agriculture, Fisheries and Forestry, Canberra, 2006, viewed 11 January 2011, <http://www.acera.unimelb.edu.au/materials/brochures/SDM-PlantationsWater.pdf>.

property scale. That is, other aspects of the landscape must be considered, and the positive and negative impacts of each particular land use assessed, to develop a comprehensive understanding of a catchment landscape.

In addition, a workshop run by JVAP, the Department of Agriculture, Fisheries and Forestry, and CSIRO in response to plantation expansion and water use found that:

- "Expansion of plantings into lower-rainfall areas will probably have negligible effect on downsteam water resources. However, at the local scale, new plantations on cleared land may cause unregulated rivers to revert to the flow patterns they had before the land was cleared.
- "Tree plantations of all types reduce peak runoff rates during flood-producing storms which lessen flood damage, landscape erosion and river siltation.
- "Positive effects of afforestation can be identified in some landscapes suffering from dryland salinity. In local groundwater flow systems, strategically-located woodlots and plantations can check or slow its spread and eventually rehabilitate damaged areas. The salt concentration of river flows can also be reduced".[11]

These findings further cement the positive role that plantations play in the landscape and their 'impact' on water availability.

In relation to land-use 'competition' the publication Plantations and Water state: "Plantations have been a part of the landscape in Australia for well over a century. They now occupy 1.7 million hectares, about 0.2% of the total country or 0.3% of the area used for agriculture".[12] The most recent figure for the area occupied by plantations is 2.02 million hectares.[13] Thus the percentage is still small. This small figure can be juxtaposed to the 61% of Australia's total land area which is occupied by grazing and cropping.[14]

AFG supports trees being integrated into the landscape dependent on the landholders needs: shelter for crops and stocks; diversifying income through timber markets; and/or to address land degradation issues.

Recommendations

6. **AFG seeks a commitment by Federal, State and Territory Governments to maximising opportunities to develop public-private partnership investment in farm and plantation forestry. This can be achieved through land management planning that matches enterprise development with improved environmental and productivity outcomes.**
7. **AFG seeks equitable and evidence based treatment of plantations in the water debate, recognising that plantation forests in Australia are generally a non-irrigated crop.**

[11] J Powell, op. cit., p. 23.
[12] RJ Keenan, A Gerrand , S Nambiar, M Parsons, loc. cit.
[13] C Howell, 'Australia's forest resources at a glance', paper presented at the Outlook 2011 Conference, Canberra, 1-2 March 2011.
[14] D Thompson, *Plantations and Water Facts*, Plantations2020, n.d., viewed 29 March 2011, <http://www.plantations2020.com.au/assets/acrobat/Plantations%20and%20Water%20Facts.pdf>

Creating a better business environment for forest industries, including:

- **Investment models for saw log production.**
- **New business and investment models for plantation production.**
- **Superannuation investment in plantations.**

Investment models for saw log plantations

Maintaining investment in further rotations and attracting investment for greenfields establishment of sawlog plantation presents an ongoing, complex and difficult issue for the industry. Despite the success in attracting investment for plantation expansion through the *Plantations for Australia: The 2020 Vision*, predominately via the managed investment scheme (MIS) model, there has been little expansion of the sawlog resource base.

The owners of the pre-existing sawlog resource (predominately state governments – whose plantations were largely established under commonwealth loans agreements - or buyers of the plantations established by the states) while continuing to re-establish their existing estate have shown little appetite for substantial expansion. There is also almost zero interest from patient capital providers (pension or superannuation funds and the like) in investing in plantation establishment. The investment models used to make such investment decisions seem wary of either the long time frame for return or the agricultural risk or both.

These plantation owners do, however, have a strong appetite for established plantation forestry assets. Recent ownership changes which saw the Forest Plantations Queensland resource and the Timbercorp resource both sold to long term (mainly overseas) investors, when added to the previous (mid nineties) sale of the Victorian plantations, support the view that a mixed age class substantive estate is an attractive investment.

Other mechanisms have also been available. A range of joint ventures between private landholders (usually farmers) and either state based plantation owners or processors seeking to secure future resource have been implemented in a number of jurisdictions. Generally there has been limited success though many of these plantings (as an estate rather than a group of individuals) have now been purchased by patient capital providers. This is largely a consequence of joint venture partners, often forest processors, determining to move significant capital investment off their balance sheets. A slightly different model of leasing land (again usually from farmers) has been used with some success by MIS companies and to a lesser extent by state agencies, so from a sawlog perspective again there has been little resource expansion.

A range of government grant programs, predominately with an imperative of natural resource management outcomes, have and continue to be available in various guises. The most targeted of these was the Commonwealth Farm Forestry program. The problem with many of these programs is they were and remain process rather than outcomes focussed. Or to put it another way, concentrated on the facilitation and method of delivery rather than getting more trees in the ground via direct funding. Some exceptions to this include the Victorian Plantations for Greenhouse program. While seeking to get trees in the ground the government was again

focussed on landscape change and biophysical outcomes rather than trees for production.

Elsewhere in this submission there is discussion on valuing the environmental attributes of forests. The key aspect of this section is to discuss what mechanisms might be considered to encourage further investment in new plantations, especially for sawlogs. In that context carbon, water and other biodiversity values should be considered as having at best a supplementary value but in most cases a currently unrealisable monetary value.

The greatest impediment to investment in greenfields plantations is the long time frame for realising any return on the investment. There are typically modest returns from thinning in sawlog plantations from about years 7-15 and again at about years 15-22, with the major return at harvest varying from years 25-40. The principle impediment is the upfront investment in the establishment and early nurturing of the plantation. This is borne out by the attractiveness to investors discussed above in established but not yet mature resource.

Another impediment is the period inequity of plantations in that the heavy investment upfront (and the commensurate carrying costs of that capitalisation) are further eroded at harvest by a significant tax burden on the returns (lumpy returns). There is a substantial asymmetry in the tax system which is exacerbated for small growers who do not have a business structure that allows them access to the company tax provisions (rates) and those growers are likely to find themselves taxed at the top marginal tax rate with little or no relief through tax averaging or Farm Management Deposit provisions.

A further impediment, again discussed in greater detail elsewhere, is the distinct lack of effective market signals and transparency of pricing even in today's market. This is further exacerbated by the length of rotation, which adds risk to the investment because it is difficult to maintain a high level of confidence that current processing capacity will still be in place when the trees mature or that proposed processing investment will be delivered.

New business and investment models for plantation production

Figure 1: "Getting the policy mix right"[15] summaries the key points which can be utilised to promote farm forestry and foster a better business environment for forest industries. The financial incentive instruments listed are: grants, tax incentives, stewardship payments, and environmental markets.

[15] J Powell, op. cit., p. 52.
M van Bueren, Making Farm Forestry Pay. Selling the environmental services of farm forestry. The JVAP Research Update Series No 3, *Rural Industries Research and Development Corporation*, 2002, Publication No. 02/018.

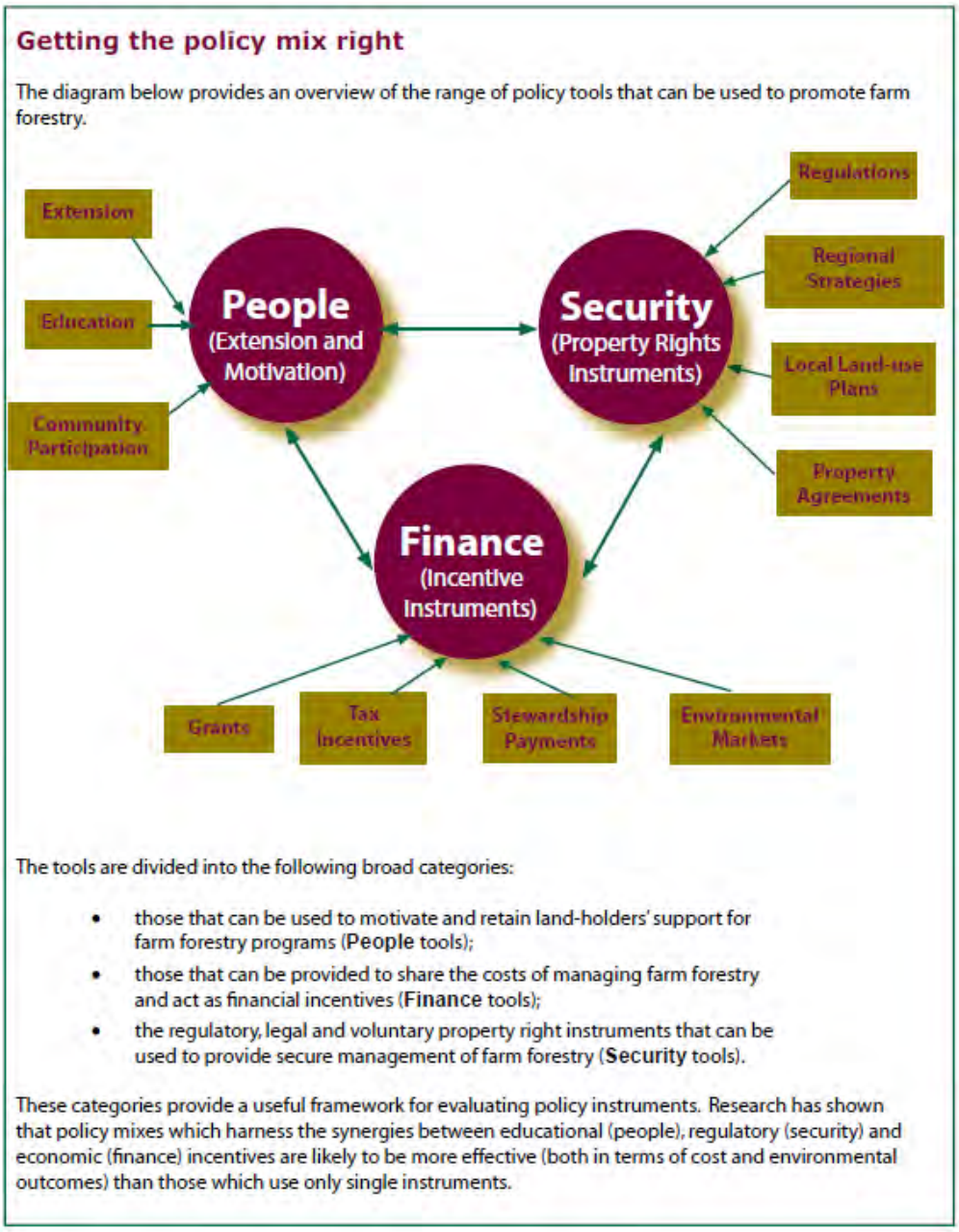

Figure 1: "Getting the policy mix right"[16]

AFG supports all of these options and, in particular, calls for greater than 100% tax deductibility for farm forestry plantings. An alternative option for landholders can be drawn from Scotland where landholders have the opportunity to receive a woodland creation grant. There are five different options for landholders to choose from based on species and design, and there is a corresponding grant available for the option the landholder chooses.[17] The grant is greater for prioritised areas, and includes both production and non-production forest (woodland) establishment. In Australia, this could be translated to landholders with degraded farmland.

[16] J Powell, loc. cit.
M van Bueren, loc. cit.
[17] The Scottish Government, *Woodland Creation*, 2011, viewed 30 March 2011, <http://www.scotland.gov.uk/Topics/farmingrural/SRDP/RuralPriorities/Options/WoodlandCreation>

Another mechanism to share the costs of establishing forests on farms is through joint ventures and leasing private land to commercial forestry companies. These relationships can prove mutually beneficial, and provide landholders with an additional source of income, and encourage establishment of trees on land already under private ownership.

Further, security of credit provision from banks for long term investment projects needs careful consideration as some gearing of plantation investment will be required by most investors.

Sovereign risk is also an issue which must be addressed in order to create a better business environment for farm forestry. This is addressed in Figure 1, under the heading “Security”. The issue of sovereign risk is particularly pertinent for the management of private native forests. Small-scale landholders are unlikely to become involved in actively managing their private native forest resource if they believe they will be at risk of having their time and effort revoked in an ill-considered, sporadic and/or arbitrary manner.

There is a range of evidence and analysis that supports the view that there exists clear market failure in establishment of plantations for sawlogs. The lack of market information, due to both the duration of the crop from establishment to harvest, and also because there are only a few major suppliers (mostly state originated) who generally do not operate transparently in the market place, results in an inherent lack of confidence on the part of small-scale growers.

So what can be done? A range of options might be considered and these are briefly articulated below. The overarching principle will be that given the current market failure there will be pressure on the government to make one of two decisions. These are:

1. retain the current support provisions for the industry (the status quo); or
2. implement a range of measures to underpin industry confidence and commensurate expansion of the plantation sawlog resource.

In respect of option 2 some areas of consideration with respect to farm forestry are:

A. provide greater than 100% tax deductibility (suggestion is 150%) for the establishment of plantations on farmland where integrated with continuing farm systems; or
B. develop a system of infrastructure or plantation bonds for the establishment of plantations on farmland where integrated with continuing farming systems; or
C. provide direct grant funding for integrated plantation establishment on farmland which complements existing agricultural landuse; or
D. a concessionary taxation provision at for-harvest income.

These options require further development and other industry submissions are expected to propose further alternatives which AFG are likely to also support.

In the context of the first three approaches the underlying theme is to provide a funding mechanism for the establishment of plantations that are integrated into

farming systems, rather than seeking to replace or substitute existing agriculture. Their strength is that they would substantially resolve the land use conflict and the social license arguments against plantation expansion, while allowing the environmental and companion agriculture benefits to be realised.

The substantive goal with all of these options for farm forestry is to achieve a mechanism that would target the integration of trees into an existing and continuing agricultural landscape. This will provide a major step towards dissipating the concern the agricultural sector has about land use change, though AFG does regard at least some of those concerns as overstated, and thus the food versus fibre argument. It is an elegant solution. There will be some transitional issues in the market interaction between tree growers and suppliers, going from a few major suppliers to a few processors to a larger number of suppliers, this is however not rocket science it is simply a varied set of transactions which the farm sector are well versed in already.

Rules will need to exist to quarantine these provisions to forests integrated into farm systems. Such rules are not beyond the wit of law makers and AFG would be keen to assist with essential and appropriate design processes to ensure that there are logical and practical mechanisms in place to achieve such outcomes.

Serious deficits in plantation establishment require serious structural change, one or more of these models has significant potential to reinvigorate plantation establishment for sawlog production.

Superannuation investment in plantations (**AFG Policy Statement #30**)
Many private plantations have been, and continue to be, established and managed as an important component, and in some cases the totality of the growers' 'superannuation' (retirement nest-egg).

Despite this admirable intention, such growers are subject to severe discrimination within the superannuation regulatory system. This failure takes two major forms.

One is the endemic problem of 'lumpy returns', whereby the grower receives 'superannuation' income at harvest in one lump sum, almost all of which is taxable at the highest marginal rate, rather than at any form of concessional rate such as that applying to monies withdrawn from a superannuation fund.

This problem is made worse for most private plantation growers by the limited and highly conditional access they have to the major income averaging provision available to other primary producers. First, Farm Management Deposits (FMD) are only available to primary producers with 'off-farm' income less than $65,000, which eliminates many private plantation growers. Second, any eligibility quickly evaporates if the grower doesn't carry on primary production after final harvesting (most common), because any income placed with an FMD must be withdrawn within only 120 days of when primary production ceases.

The second important manifestation is the treatment of a private plantation with respect to its contribution to a grower's self-managed superannuation fund (SMSF). Although a private forest may be part of an SMSF in circumstances where the forest operation is commenced by the fund, transfer of an established forest into an SMSF

can only occur in very specific and very rare circumstances that satisfy a number of the SMSF tests, such as 'sole purpose', 'related party' and 'business real property'.

Most private plantations now approaching harvest age were established well before the SMSF 'revolution', and have no chance of being made to fit the current SMSF conditions that would allow the growers to take advantage of the tax treatment of superannuation funds.

For more than a decade, policy makers in Australia have realised that, with an ageing population that will live longer, steps must be taken to encourage individuals to fund their own retirement.

Over roughly the same period, State and Federal Governments and industry have driven a plantation industry development strategy, *Plantations for Australia: The 2020 Vision*, and have recognised the simultaneous contributions that private plantations and farm forestry can make to natural resource management as well as social and economic development objectives.

However, many of the private growers who established long-rotation plantations decades ago in order to 'fund their own retirement' are now suffering personally from that decision. They are confronted by a tax regime that penalises 'long term forest enterprises with one final harvest', and that also prevents them converting an older form of 'superannuation' (plantation forests) into a contemporary form (SMSF).

Further, anecdotal evidence abounds that many potential farm foresters and private plantation growers are being discouraged from growing plantations because they learn from existing forest growers of the severe tax penalties they will face at the time of harvest.

All of these problems are separate from, but not unrelated to, the fact that the system also discourages trading in immature standing plantations (secondary markets).

The current provisions under the Tax Act are more favourable to selling harvested timber than on-selling standing trees (secondary markets). Private growers who establish a plantation are able to claim the establishment costs as business expenses in the year they are incurred. When the grower harvests the plantation and sells the timber to a mill, the mill is then able to claim the timber as a deductible as it is a business expense. However, if the trees are still standing and the grower wishes to sell the trees (timber), a (secondary) buyer will be subject to the Capital Gains Tax (CGT) provisions without any offsetting deductions, and then wait years for a return. Further, a secondary buyer is unable to deduct the initial expense until they themselves sell/ dispose of the asset. Thus, secondary markets require a buyer who is willing to pay a large outlay for the trees.

Where this relationship is particularly problematic is for long-rotation plantations, as the taxation treatment is more favourable to those landholders establishing plantations than those purchasing trees already established (secondary markets). Thus, the unattractiveness to establishing long rotation plantations is evidenced by

this weak secondary market, as a potential buyer has to be able to pay a large sum upfront without any offsetting deductions. Long-rotation plantations reach maturity between 25-40 years of age, and as such a landholder is committed for this time period, unless they can find a secondary buyer, such as an institutional buyer (superannuation company) who is happy to sit on the asset.

If trading in secondary markets were readily available, it would provide more flexibility and choice for private plantation growers.

Recommendations

8. **AFG seeks provision of grants, greater than 100% tax deductibility, stewardship payments and the creation of environmental services markets in order to create a better business environment for farm forestry.**
9. **AFG seeks recognition of legitimate forestry production purposes and associated activities, including sustainable timber harvesting, as existing and continuing lawful use of naturally afforested private agricultural landholdings.**
10. **AFG seeks Australian Government recognition that amending the tax rule applying to superannuation and biophysical self-generating assets (such as private forests) can help achieve its retirement policy objectives.**
11. **AFG seeks a Farm Management Deposit Scheme (or equivalent) that recognises and accommodates the unique characteristics of private forests and does not discriminate against forest growers.**

Social and economic benefits of forestry production (**AFG Policy Statement #2**)
Farm forestry is best equipped to improve socio-economic values in regional communities through its flexibility and ability to be planted in a way that best suits the landholders property management plan (PMP). This integrated approach enhances local and regional land use sustainability which provides socio-economic benefits that are reaped by the landholder and broader community.

Declining rural livelihood is a commonly occurring theme throughout Australia, and the removal of existing forest industries, the stifling of private native forest management and new or expanded plantation industries, and the growing expanse of national parks is perpetuating and compounding this further. A recent BRS report focusing on specific forest industry regions in Australia, as opposed to regions dependent on agricultural productivity alone, revealed a common message: where there is a significant forest industry established, rural communities are wealthier, they retain more young people, diverse job opportunities are created and alternative income opportunities emerge for landholders'.[18]

Recent studies of the socio-economic impacts of plantation forestry have revealed that plantation establishment can contribute significantly to stable economic growth while at the same time conferring added environmental protection in regional areas.

[18] J Schirmer & M Parsons, *Plantations & rural communities: current trends in plantation establishment, & socio-economic impacts of the expanding plantation industry*, Bureau of Rural Sciences, Department of Agriculture, Fisheries and Forestry, Canberra, 2005, viewed 28 March 2011, <http://adl.brs.gov.au/brsShop/data/brs_seminar_11nov05.pdf>.

Furthermore, improved income risk diversity exists for landholders and other members of the community in areas where significant forestry and agricultural industries co-exist. Community engagement is therefore an important component of ecologically sustainable forest management (ESFM), and is supported by the growing recognition of corporate social responsibility within the forestry industry.

Further, AFG has significant concerns in relation to detrimental socio-economic outcomes imposed on regional communities as a result of not-for-harvest carbon plantings (an option proposed in the Carbon Farming Initiative). AFG considers that permanent plantings, that are effectively 'locked away' and on a large scale, are likely to have an adverse deleterious impact on regional communities and social infrastructure, and are likely to be poorly managed and to create unintended and undesirable environmental difficulties. In utilising trees to address climate change, AFG supports an holistic approach to rural resource management, where forest plantings and private and public native forests are integrated with agriculture in the rural environment. This comprehensive systems approach will produce many significant and concurrent benefits for the community and the environment, including carbon sequestration. Furthermore, such benefits will be provided indefinitely and on a sound economic and environmental basis.

AFG advocates that there is greater net carbon sequestered in harvesting and replanting a forest stand, than planting a forest stand and leaving it unmanaged for 100 years. Harvested wood products store carbon, so more carbon is sequestered through continually harvesting and replanting a forest stand, due to growth rates, than a forest stand that is left standing and unmanaged. Thus carbon is continually sequestered through the cyclical process of harvesting and replanting trees which will ultimately result in more sequestered carbon than just leaving an unmanaged forest stand for 100 years.

A key area of identified concern is the social dislocation of communities purportedly as a result of the establishment of broad scale plantations. While AFG continues to hold the view that these concerns are at least overstated it remains the case that substantial variation to traditional land use 'offends' many rural communities. Communities appropriate landscapes whether they be urban or rural, pastoral or sylvan. They therefore will not be told what they want and where in their landscape. Understanding this is to understand the need for a social licence. The most effective way to address concerns is to integrate trees sensibly back into the landscape and to enable landowners themselves to stay in the 'driving seat', i.e. give farmers the opportunity to learn, play and implement how they will use trees to enhance their farming enterprise in their particular situation.

This principle is not confined to trees in the landscape, communities' rail against many changes. Proposals to develop shopping centres (e.g. Woolworths at Maleny), residential housing intensification (e.g. Pacific Highway in Sydney) or the development of required infrastructure (e.g. Gungahlin Drive extension in Canberra) are all areas where the community have sought to express their concern, and there are countless others.

The issue for forestry (leaving aside the ongoing activist opposition to sustainable utilisation of native forests) is how best to integrate the desired expansion of the plantation estate in such a way that communities are least concerned. There will be a continued need for a range of community engagement tools to be utilised. Good neighbour charters such as those adopted in Tasmania are one such tool, which has provided some limited success.

However, as is discussed in the investment section, there is a need to more strongly promulgate the farm forestry model. On the basis that much of the community concern regarding plantation establishment is the impact on the ongoing viability of the farm sector (disregarding the close-minded argument from those who want more renewable energy and sustainable resource options, but continue to oppose forestry) there is a need to look more closely at the integrated forestry model. It is a widely supported view that reafforestation between 10-30% can be easily and sensibly integrated into farm systems in a manner which will enhance the agricultural productivity as well as provide a more diversified income stream. This is supported by a case study in the paper *Farm forestry for green and gold: Australian experiences of linking biodiversity to commercial forestry* which found that the productively was greater after retiring some of a grazing property to trees; there was a 320% increase in sheep numbers despite planting 33% of the property with trees.[19]

Given the social impact issue is predominately in the context of lost agricultural opportunity then farm forestry allows forest expansion, maintenance of agricultural production and also substantially resolves the 'real' social license issue by maintaining farmers on farms while still enhancing the forestry resource.

The promotion and greater adoption of farm forestry could be means to create more positive socio-economic outcomes in regional communities. Landholders who adopt farm forestry can achieve greater financial security and returns, including indirect benefits such as reducing stock mortality during periods of critical exposure e.g. during and following lambing.

Recommendations

12. **AFG seeks that BRS is maintained as the principal, centralised organisation for researching, preparing and disseminating information relating to the environmental and socio-economic aspects of forest and timber industries in Australia, and that its scope be broadened to include reporting on the socio-economic and environmental benefits and impacts of sustainable private native forest management.**
13. **AFG seeks that government work with the forest industry and representative organisations to assist in promoting forestry and timber products to both regional and urban communities, recognising the**

[19] D Race & D Freudenberger, (eds) *Farm forestry for green and gold: Australian experiences of linking biodiversity to commercial forestry*, Australian National University School of Resources, Environment & Society, CRC for Sustainable Production Forestry, and CSIRO's Division of Sustainable Ecosystems, with support from the Commonwealth's Natural Heritage Trust and Environment Australia's Bushcare Program, 2003, viewed 28 March 2011, <http://www.environment.gov.au/land/publications/pubs/forestry.pdf>.

important role that forestry has in contributing to the triple bottom line in rural areas.

Potential energy production from the forestry sector, including:

- **Biofuels**
- **Biomass**
- **Biochar**
- **Cogeneration**
- **Carbon sequestration**

As Australia's response to climate change gains momentum, there is a great opportunity for the role of forests in both energy production and as a means to mitigate carbon. Both provide potential opportunities for landholders.

Bioenergy (**AFG Policy Statement #12**)
The rapid development of biomass-based energy and fuel production systems should be a key focus of renewable energy policy in Australia in reaching a low-carbon economy. The use of wood for power generation is already practiced in Australia, however does not form a major component of electricity supply as it does in some countries. Further, woody biomass is better placed to provide baseload energy than other renewable energy sources such as wind, solar and waves, as the amount of fuel is easily measurable.

The last 20 years of technological development in wood combustion has seen dramatic improvements in energy harnessing and efficiency, while delivering significant reductions in emissions. Modern wood and charcoal-fired power plants emit almost pure carbon dioxide throughout operation, while coal-fired power plants emit a combination of carbon dioxide, carbon monoxide, sulphur dioxide and nitrogen oxides. Wood and charcoal as biofuels also have an important connection with relative greenhouse gas accumulation in the atmosphere. For example when wood and charcoal are burned, it is immediately recycled carbon dioxide which is released into the atmosphere, with the next forest growing cycle absorbing equivalent amounts of carbon through renewed growth and photoassimilation. As wood and charcoal-fired power generation can replace or coexist with coal-fired generation, the net effect is a significant reduction of greenhouse gas emissions by pro rata replacement of fossil fuel emissions.

At present there is a substantial, but largely untapped resource of biomass residue that accumulates from forest management (thinning), harvesting and processor operations. This could and should be utilised for the production of renewable biomass based electrical and thermal energy (bioenergy) and liquid fuel (biofuel) or biochar. Forest industry residue capture for biomass energy production alone could be significantly increased to partially replace or supplement the use of fossil-fuel sources. Processor surpluses such as sawdust and wood scraps provide a clean, readily available resource for future bioenergy production. Forest operation surpluses also include underutilised logging residue, non-commercial thinnings and silvicultural residues whose practical and commercial use for bioenergy would add significant value and efficiency to existing forest production.

Promoting commercially viable deep-rooted crops for marginal lands is of critical importance for a range of environmental and economic reasons, not least for farm income diversification. Biofuel production is a potential new industry that could utilise the resource grown from woody perennial crops. The range of deep-rooted crops suitable for biofuel production is enormous and could include many native tree and shrub species. Farmers in medium to low rainfall zones are in need of commercial forestry and land management solutions. The placement of biomass to liquids processors, supplied by crop resource in several agricultural areas, could reinvigorate rural economies and deliver broad environmental benefits (such as salinity abatement), while also supplying liquid transport fuel to the market and participating growers. If markets became more established, primary producers in the future may also have enough incentive to establish commercial crops exclusively for bioenergy production, or in multiple use applications.

The methods and mix of electricity generation systems in Australia need to change dramatically if we are to address the inevitable rise in power consumption, and consequent rise in greenhouse gas emissions from fossil fuel based electricity generation, as the economy continues to grow. The Federal Government committed to obtaining 20% of Australia's energy from renewable sources by the year 2020, and recently launched the Renewable Energy Future Fund to aid in reaching this goal. AFG advocates that funding should be provided for research, development and extension into biofuel, bioenergy and Biochar technology, including upscaling the technology to a commercial scale. This upscaling must include options for regionally based utilisation of biomass at sufficient scale to be economically viable yet small enough to be effectively utilised locally. Examples of this thinking already exist (though as yet unfulfilled) via the Tree Power feasibility study into utilising salvage biomass from major bushfires and the Beaufort Hospital furnace refit proposal in Victoria.[20] This has also been a component of most major sawmills, who use waste sawdust and shavings to feed boilers to produce heat energy for timber drying and could feasibly add turbines to produce electricity as well. This will assist in the achievement of Australia's renewable energy targets and provide Australian farmers and tree growers with another source of income through sales of woody biomass.

Increases in wood utilisation in forest operations, as a result of commercially viable biomass-to-energy market options, will result in enhanced economic return to forest owners and managers generally. This in turn would lead to a greater investment in maintaining the integrity of the forest estate and assist towards meeting the environmental needs of farms and the rural landscape as a whole. Real government commitment to bioenergy development in Australia will not only deliver economic returns to forest growers, but will also support rural communities, while delivering a broad range of environmental benefits. This should be initiated through the Renewable Energy Future Fund at both a large and small scale.

[20] T Richardson & J Sanderson, *Fighting Fire with Fire*, 2009, viewed 29 March 2011, <http://www.treepower.com.au/FFWFv3.pdf>

The use of wood for ethanol production is already beginning to occur in the USA at a commercial scale.[21] The Australian Government should look to these examples to identify opportunities in Australia as part of reducing emissions in Australia.

The potential of bioenergy is recognised in the *National Climate Change and Commercial Forestry Action Plan 2009-2012*, which is a guiding action plan for both the forest industry and governments.[22] AFG supports Focus Area Three: Bioenergy and looks forward to the prescribed outcome: "Examines the new market opportunities for electricity and liquid fuel from wood-derived biomass, and proposes strategies for new and pre-commercial technologies to be developed and deployed". Furthermore, AFG supports Actions 12-14 and its outcomes to capitalise on the opportunity of bioenergy in Australia.

All forest biomass that is legally sourced from managed forests should be eligible as a renewable energy source under any Renewable Energy Target (RET). This should include forests under Regional Forest Agreements between Commonwealth and State governments, forests managed according to state based Codes of Practice for forestry; or forests managed in accordance with vegetation management legislation. The 'high-value' test for native forests, where the total financial value of the high-value processes must be higher than the financial value of the other (lower value) products of harvesting, means that lower quality native forests are excluded from the MRET. Degraded native forests or woodlands seem an ideal source of timber for biofuel, bioenergy and biochar, as there is now reliable research evidence that an actively managed forest is healthier than one locked up and left unattended.

Other transport biofuel production systems, in addition to ethanol-from-lignocellulosics, also deserve serious government investigation and support, one example being biomass gasification and catalytic production of synthetic diesel fuel. Large scale commercial biomass-to-liquid fuel production systems are currently nonexistent in Australia. Continued R&D as well as industry 'kick-start' funds in these areas should be a greater priority for the Government, such as through the Renewable Energy Future Fund. Woody biomass presents a carbon-neutral, or in the case of biochar a permanent carbon sequestering, alternative to technologies hitherto dependent on fossil fuels, and wood products and should play a key role in the development of an emissions-reduced Australian economy.

Despite a range of government programs aimed at developing renewable energy options there is little investment in developing technologies for biomass utilisation. For example the expenditure of some $450 million on geosequestration research vastly dwarfs any investment in biomass utilisation, whether for electricity or fuel. AFG believes that this underinvestment is a major impediment to serious enhancement of bioenergy and potentially undermines the 20% by 2020 renewable energy target.

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[21] B Apthorp, *Friday Offcuts* 11 March 2011, viewed 30 March 2011: <http://www.fridayoffcuts.com/dsp_newsletter.cfm?id=412#3>

[22] Council of Australian Governments, *National Climate Change and Commercial Forestry Action Plan 2009-2012*, Department of Agriculture, Fisheries and Forestry, Canberra, 2009, viewed 13 September 2010, <http://www.daff.gov.au/_data/assets/pdf_file/008/1386431/climate-change-061109.pdf>

Bioenergy – Firewood

The principles raised above also apply to the firewood industry. Firewood is a renewable, sustainable energy source and Australians consume 4-5 million tonnes of it each year. The firewood market provides another opportunity for landholders seeking diversification for income. Firewood is a sustainable product: indigenous species can be planted on marginal land and coppicing of suitable species ensures roots (and barks and leaves) are left on site to avoid nutrient depletion.

A study conducted by CSIRO in 2003 found that firewood is generally more preferable for domestic heating than other non-renewable sources of energy, in terms of limiting net greenhouse gas emissions.[23] The report stated that harvest waste from plantations including thinnings and residues, provided the most benefits in relation to carbon sequestered per unit of energy produced.

However, the firewood industry is still subject to a lack of value and "tragedy of the commons". To prevent this, workshops for landholders should be provided to equip them with the necessary skills to supply firewood markets. Educating landholders on best practice for firewood production coupled with consistent regulations would encourage greater transparency for the sector.

Biochar

Interest in the application of biochar to enhance agricultural productivity commenced with the discovery of '*Terra Preta*' soils in the Amazon. These soils contain a high percentage of black carbon/biochar derived from the combustion of biomass under oxygen limited conditions. Biochar can remain in the soil for millennia and is one of the very few options we have of permanently returning atmospheric carbon to the soil where it can also be highly beneficial in increasing production.

Biochar enriched soils increase crop production (usually in excess of 100%), reduce the need for applying fertiliser, improve moisture holding ability, increase biological activity and soil biomass, reduce methane and nitrous oxide (two very deleterious greenhouse gases) and reduce runoff of undesirable nutrients and agricultural chemicals to waterways. In fact it is a veritable '*Magic pudding*' in its ability to permanently reverse climate change while at the same time feeding our hungry planet!

Modern systems of biochar production are by 'slow or fast pyrolysis' which produce varying proportions of 'syngas' and biochar. Combustion of biomass without oxygen at temperatures of between 450 and 550 degrees Celsius is slow pyrolysis and converts approximately 50% of carbon contained into syngas and 50% into biochar.[24] Bichar produced from sustainably produced biomass has the potential to <u>permanently</u> sequester at least 10% of Australia's greenhouse gas emissions while also contributing to regional energy and liquid fuel requirements.

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[23] Australian Greenhouse Office and Environment Australia, *Lifecycle assessment of greenhouse gas emissions from domestic wood heating. Greenhouse gas emissions from firewood production systems*, report prepared by CSIRO Forestry and Forest Products: K Paul, T Booth, A Elliott, T Jovanovic, P Polglas, M Kirschbaum, Department of Environment and Heritage, Canberra, 2003.

[24] S Sohi, E Lopez-Capel, E Krull, R Bol, *Biochar, climate change and soil: A review to guide future research*, CSIRO Land and Water Science Report 05/09 February 2009, p. 18.

Carbon Sequestration (**AFG Policy Statements #10 and #11**)
The forest industry will be presented with opportunities through mitigation and challenges through adaptation as a result of climate change. Forests sequester carbon and have an important role to play in addressing climate change as forests and wood products provide long term carbon storage.

Forest practices provide the most efficient and cost effective means of carbon sequestration available. Forests therefore have an important role to play in promoting and implementing environmentally sound, cost effective responses to climate change, in particular in assisting the Federal Government to achieve a low carbon future.

AFG does not support the permanent sink approach favoured by the Federal Government in the Carbon Farming Initiative (CFI). The permanent sink argument disregards the fact that timber stores carbon for the life of the product, during growth and after the tree has been harvested, while on the contrary, unhealthy and poorly managed forests and vegetation risk becoming net emitters of carbon due to the effects of reduced growth and increased risk of fire and disease. They also risk becoming a harbour for noxious flora and fauna. There is therefore no reason why the goal of sequestering carbon should be separated from that of producing a timber product and every reason to suggest that establishing proper links between the two is the only way to ensure that healthy, beneficial outcomes for both carbon storage and resource management prevail.

The permanents sinks approach, where trees are expected to be in the ground for at least 100 years could have a detrimental impact on the socio-economic fabric of a community. This is where the real competition for land could arise - between agriculture and permanent carbon plantings. Further, the argument for permanent forest plantations ignores the fact that harvested wood products continue to store carbon both during and post use. The assumption that a forest becomes a substantial or total carbon emitter at the time of harvest is quite erroneous.

Wood products actually store carbon for the life of the product and only emit carbon dioxide when they are burned, or decay. Forest systems after harvest, unless managed unsustainably, retain a fair proportion of their natural carbon stores in stumps, roots, and larger residue pieces for some time, unless burned. They also regrow or are usually replanted. The CFI should play an important role in promoting the use of wood to replace energy intensive alternatives, through the inclusion of carbon stored in wood products from scheme commencement. In addition to sending the right message to consumers about the emissions profile of wood products, this would create an incentive for the strengthening and expansion of sustainable forest industries with positive long-term benefits both economically and environmentally.

AFG is concerned that the current provisions of the CFI are unlikely to lead to any material increase in the production forest estate. The proposed 'additionality' test will inhibit the participation of commercial forestry companies participating in the CFI, and thus prevent them being rewarded for the carbon they are sequestering through their management practices.

Further disincentives for participation in the proposed CFI scheme include the variable risk of reversal buffer, the sovereign risk associated with scheme participation, and the significant costs of reporting and compliance, which small-scale growers may not be able to afford.

Recommendations

14. **AFG seeks government support for the development of regionally based biofuel production plants combined with the production of biochar to utilise resource from forest and wood processor residues and crop residues, as well as from short rotation biomass crops.**
15. **AFG supports the development of greater integrity in the firewood industry, achieved through educating landholders about best practice management.**
16. **AFG seeks inclusion in the CFI of carbon stored in harvested wood products from the scheme's commencement, including wood, paper and carbon stored in long-life landfill or as biochar incorporated into agricultural or forest soils.**
17. **AFG does not support plantations for permanent carbon storage.**

Land use competition between the forestry and agriculture sectors.

- **Implications of competing land uses for the cost and availability of timber, food and fibre.**
- **Harmonising competing interests.**
- **Opportunities for farm forestry.**

(**AFG Policy Statements #1, #2, #6**)

First and foremost AFG disagrees with the inclusion of farm forestry under the heading of "Land use competition between the forestry and agricultural sectors". There should be no competition between farm forestry and agricultural sectors and as stated previously AFG supports an integrated system (as do many farm bodies), where trees are planted to enhance other forms of land use, including agriculture.

The integrated approach for farm forestry addresses and prevents the competition between the need for timber and the need for food. Trees can be planted on a proportion of the property, while stock and crops can be grown on the remainder depending on the landholder's requirements.

A mechanism to harmonise competing interests is through greater adoption of farm forestry through the provision of extension and technical support services. Equipping landholders with the necessary skills to manage their private native forests and establish new plantations for sustainable timber products.

Greater opportunities for farm forestry exist through utilising it to address Australia's land degradation issues. Australia has a history of extensive land clearing which has led to environmental degradation, especially of key public assets like our rivers and the community benefits they provide. Frequently, policies and initiatives regarding environmental health or natural resource management outcomes are developed in isolation rather than integrated with other sectors to achieve multiple policy outcomes for the Australian community. This can translate into inefficiencies both with government investment and in terms of land use productivity and

environmental protection, and consequently result in short-lived funding for policy outcomes and land use solutions which are less than optimal in the medium and long term.

The notion that the benefits of investment in natural resource management enhancement can only be for environmental outcomes is fundamentally flawed. It is only through allowing commerciality of sustainably managed natural resources that their real value to both the landholder and community can be maximised. Done properly, including through the provision of robust market frameworks, commercial imperatives can drive investment in an enhanced natural environment and will prove to be much more efficient than so called targeted grant schemes. The silo mentality that now pervades the Caring for Our Country framework serves to further undermine this vision. Specifically designed commercial tree plantings, with attention to species selection and configuration, would be far more beneficial, cost effective, and a natural solution to NRM and land degradation issues, than very targeted band-aid solutions, associated with reactionary policy making. These benefits were recognised by the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality in the publication: *Farm Forestry's Role*.[25]

Farm forestry has a defining role to play in addressing Australia's land degradation issues and needs to be supported by all levels of government. Too frequently policies for forest industry development and natural resource management outcomes are seen as mutually exclusive events. This reflects a naivety, absence of innovation and lack of initiative by policy makers. AFG previously provided the example of landholders initiating the planting of 12,000ha of oil mallees to address land degradation issues and boost crop productivity. Potential exists for these kinds of initiatives throughout Australia and they should be identified and supported by both the federal and state governments.

Integrated, broad spectrum policies would create value for money, and potentially reduce administrative costs including government spending inefficiencies and help prevent policies from being short-lived and reactionary. The role of forests in natural resource management and addressing climate change, and the need for forest industry development should not be underestimated. AFG believes in a proactive, multilateral approach to policy development and policy objectives which will assist in demonstrating the multiple benefits that forestry delivers to those, and other issues facing Australia.

It is important that where grants are administered, that funding does not get absorbed and lost in other tasks and processes, ensuring that the majority of funding is spent on achieving targeted on-ground outcomes. Mechanisms to streamline grant funding, thus minimising administrative expenses, is supported by AFG and should be pursued by all levels of government.

[25] Department of Agriculture, Fisheries and Forestry, *Farm Forestry's Role*, Natural Heritage Trust and the National Action Plan for Salinity and Water Quality, Department of Agriculture, Fisheries and Forestry, Canberra, 2003, viewed 30 March 2011, <http://www.daff.gov.au/__data/assets/pdf_file/0004/37579/ffrole.pdf>

Further opportunities for farm forestry exist in the sustainable management of the private native forest resource.

Recommendations

18. **AFG seeks increased understanding of complementary strategies involving agriculture, forestry and farm forestry, and of desirable opportunities for mutual land use benefits, including environmental and natural resource protection, commercial sustainability and on-farm energy and greenhouse gas management.**
19. **AFG advocates a strong focus on the utilisation of integrated forestry for multiple outcomes that includes:**
    - **proactive repair of riparian landscapes to improve water quality and river health, both insitu and downstream thereby benefiting ecology, fisheries and downstream assets like the Great Barrier Reef;**
    - **positive and community friendly responses to climate change by using productive forests as carbon sequesters;**
    - **managing salinity, especially to maintain or re-establish potable water supplies;**
    - **enhancing biodiversity and ecosystem resilience;**
    - **production of sustainable forest products; and**
    - **provision of sustainable sources of biomass for renewable fuels and electricity.**

Research and Development (AFG Policy Statement #33)

While the topic of research and development isn't specifically addressed in the terms of reference, AFG advocates it is an important topic to canvas particularly as funding for the Joint Venture Agroforestry Program (JVAP) has ceased and forestry research carried out by CSIRO is gradually dissolving.

A vibrant farm forestry sector must be underpinned by consistently funded research and development which is focussed on outcomes for the farm forestry sector. This is currently not occurring. JVAP is no longer operational due to loss of Federal Government and other funding, however during its tenure it was charged with "national leadership, funding support and coordination for Research, Development and Extension (R, D &E) to build confidence in agroforestry's capacity to enhance agricultural sustainability while providing additional public benefits".[26] This is not being achieved at present.

The *Farm Forestry National Action Statement* has two actions relating to research and development.[27] These are:

- Action 2.4: "Support farm forestry research and development that will promote commercialisation of new species and development of new products, investment frameworks and production systems"; and

[26] J Powell, op. cit., p. 3.

[27] Department of Agriculture, Fisheries and Forestry, *Farm Forestry National Action Statement*, Department of Agriculture, Fisheries and Forestry, Canberra, 2005, viewed 29 March 2011, <http://www.daff.gov.au/__data/assets/pdf_file/0007/58426/nas_booklet_web.pdf>

- Action 3.4: “Co-ordinate research nationally to prevent undue duplication and ensure standard data collection methodologies”.

Action 2.4 was to be achieved through increased funding to JVAP and PFDCs both of which are no longer subject to funding. JVAP, BRS and ABARE were responsible for Action 3.4 through measurable outputs such as national farm forestry R&D documentation listed as “annual reports, project reports, etc”. As such, there is minimal farm forestry specific research and development occurring at present.

The article *Changing the standard model of reforestation across the Asia-Pacific* outlines the future drivers and challenges which will shape reforestation in the Asia-Pacific into the future. Table 2, “research issues for future reforestation” is a comprehensive list, with research priorities listed under the headings: high value timbers, conservation and watershed protection, plantation silviculture for smallholders, carbon sequestration, and landscape values.[28] AFG advocates that the federal government, in partnership with state governments, establish a national body whose priority is to prioritise farm forestry (small-scale, non-industrial) research and development findings. These findings should then be published and made readily available to the sector.

Conclusion

Farm forestry has the capability to provide a sustainable timber product while addressing socio-economic and environmental issues in regional Australia. However, the farm forestry sector in Australia is currently suffering from a lack of support by both state and federal governments.

The provision of extension and technical support services is imperative for landholders who wish to adopt best practice forest management, including managing their private native forest resource. Further, environmental or biologically rich plantings require expertise for implementation and markets for their products, to encourage more landholders to adopt these public good land management practices.

Farm forestry has huge potential in recreating the rural landscape and addressing land degradation issues as a result of Australia’s history of vegetation clearing. Farm forestry and agriculture can exist harmoniously, AFG’s members testify to this, and have been achieving mutually beneficial outcomes for decades.

The sustainable utilisation of private native forests needs to be supported by government removing impediments such as the current taxation regime, sovereign risk and contemporaneously educating landholders about the capability of their resource.

Serious attention, including commensurate supportive government policies and legislation must be given to substantially enhancing and encouraging investment in farm forestry. Certainty of access to markets, diversity of product use, sensible and targeted investment support and recognition of the resource by processors will be substantial measures of success.

[28] D Lamb, op. cit., p. 38.

The first step is greater encouragement for establishment of plantations integrated into farm systems. The right models will create an investment environment that will see farm forestry greatly enhance its place in the supply of resource to the forestry and renewable energy sectors.

Creation of environmental services markets will create a means for landholders to be recognised for public good outcomes, and provide a more effective mechanism for landholders to be rewarded for their land stewardship.

Decision-makers should explore more mechanisms for farm forestry development and natural resource management outcomes. Instead of individual policies addressing single primary industry issues, innovation and spending efficiencies should be encouraged. To create more opportunities for rural landholders, address land degradation issues, and encourage public good outcomes, environmental services markets should be created and supported.

AFG advocates a review and update of the Farm Forestry National Action Statement, with a view to begin reporting against the actions which constitute it, is an important first step in demonstrating government support for the farm forestry sector.

Thank you for the opportunity to provide a submission. Please contact the undersigned on (02) 6162 9000 to discuss any of the matters raised herein.

Yours sincerely,

Warwick Ragg
Chief Executive

APPENDIX 1: Changing the standard model of reforestation across the Asia-Pacific

APPENDIX 2: AFG Policy Statements – 4th Edition