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Group**

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Committee Secretary
Inquiry into the Australian Forest Industry
House of Representatives
PO Box 6021
CANBERRA
ACT 2600

Dear Sir/Madam,

Re: Submission to the Inquiry into the Australian Forest Industry

Please find attached a submission from the Northern United Forestry Group (northern Victoria) concerning the House of Representatives Inquiry into the Australian Forest Industry.

Yours sincerely,

Ian Rankin

Submission to the Australian Government House of Representatives Inquiry into the Australian Forest Industry

The Northern United Forestry Group



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Title page image: Farm forestry and biodiversity plantations integrated into farmland for dryland salinity management at Kamarooka in northern Victoria – A Northern United Forestry Project

Executive Summary

This submission is concerned with the advancement of a low rainfall farm forestry industry in the southern Murray-Darling Basin of South Eastern Australia. It is made by the Northern United Forestry Group (NUFG).

The NUGF comprises some 50 farming and professional members with an active interest in multi-purpose tree growing that includes high value sawlog production, firewood production, land protection and restoration and biodiversity enhancement.

Our submission makes the following key points:

- (a) Traditional farm forestry is largely restricted to land that has an annual rainfall in excess of 700mm. Below this level it is not considered profitable because rotations are longer, transport infrastructure and processing facilities are not as readily available.
- (b) Multi-purpose plantations that deliver ecosystem services in addition to wood products are considered viable where they both protect and restore degraded land
- (c) Multi-purpose plantations in low rainfall lands have considerable potential to add to bio-links that create landscape connectivity for fauna and flora across otherwise barren landscapes
- (d) In the first instance investment in low rainfall farm forestry provides public benefits in the form of ecosystems services. Private benefits do not accrue to farmer growers in timeframes of less than 10 to 20 years.

- (e) Farmers growing low rainfall farm forestry for wood production are inhibited in their investment by:
 - Government policies that subsidise firewood and timber harvesting from public land
 - The lack of a consistent framework that provides incentives (with appropriate cost sharing) for the establishment of low rainfall plantations
- (f) We submit that low rainfall farm forestry is an essential plank in protecting further degradation of Australian soils recognising the perils that climate change and over-population will deliver over the coming four decades
- (g) We would like to see farm forestry legitimised and supported for the multiple purposes of nature conservation, wood production and land protection and restoration
- (h) We believe this could be readily most achieved through community based programs and organisations working in partnership with regional NRM agencies.

Introduction

Forestry is a much debated subject in regional Australia. It affords those rural communities with suitable soils, the right climate, and access to transport and infrastructure the opportunity to diversify through the adoption of non-traditional agricultural enterprises that include a range of wood product industries. However, the same communities are threatened by the industrial consequences of private forestry plantations.

The down-side of traditional large scale plantation forestry is well understood. Social disruption is experienced as traditional agricultural land is purchased and forests take the place of crops and grazing animals. Farmers adjacent plantations are concerned with pesticides used to control diseases, and water resource managers are concerned with the loss of surface and groundwater resources (due to plant water use) in water supply catchments.

Forestry is not something we can consider in a simple way. The costs and benefits and consequences vary considerable from one place to another in sympathy with a complex array of social, economic, biophysical and ecological circumstances.

Farm Forestry

Farm forestry involves farmers incorporating commercial tree growing and management into farming systems for the production of both wood and non-wood products. Increasing agricultural productivity and encouraging sustainable natural resource management.

A lack of market outlets and access to market intelligence for farm forestry products is viewed as a major problem within the industry. This is exacerbated by the virtual absence of markets for forestry

thinnings and residues and the perception that market domination by a number of players disadvantages small-scale growers.

When combined with legislative uncertainty, this risky market creates an environment where the economic returns are low. This has led to poor adoption for farm forestry and a tendency for tree planting programs to be essentially environmental in purpose.

Farm forestry, as opposed to broad acre plantation forestry, affords landholders the opportunity to have 'a foot in several camps'. They can participate in wood product industries through the development of smaller scale strategically located plantations integrated within their farming enterprise.

Farm forestry plantations can be used to prevent and mitigate land degradation, particularly wind and water erosion and dryland salinity. They provide shelter for farm animals and crops, thus increasing the productivity of traditional agricultural activities. They also improve the aesthetic value of the land and overall landscape leading to capital gains. They provide a range of wood products that extend from firewood through to high quality sawlogs achieved through silviculture and longer-term rotations.

From an agriculture perspective, forestry and conventional agriculture are far from conflicting. They are actually complementary. Forestry helps the conventional enterprise and longer term may provide the farm with additional income from wood products.

A low rainfall farm forestry industry

The difficulty in establishing a substantive wood production industry in Victoria to date has been the dominance of traditional

forestry theories. Traditional forest science dictates that timber production is only viable on land with a long term annual rainfall in excess of 700mm

In more recent years, particularly over the last decade, traditional views of farm forestry have expanded. The potential role now includes:

1. Opportunities to replace timber harvesting within public lands with privately managed plantations grown on farmland.
2. Opportunities to establish farm-based plantations and woodlots that contribute to regional bio-links that afford much greater landscape connectivity for threatened flora and fauna
3. Opportunities to mitigate land degradation resulting from wind erosion and salinity
4. Opportunities to establish alternative source of biomass for energy production
5. Opportunities for plantations to capture and sequester atmospheric carbon in the battle against greenhouse gases
6. Opportunities to provide for improvements in stock health through plantations that provide enhanced shade and shelter
7. Opportunities to improve the capital value of farms through the establishment of woodlots that add to the aesthetic appeal of farms

Sharing the costs and benefits

The opportunities for societal gains from farm forestry are clearly much greater than

traditional narrowly focused paradigms that equate biomass production with rainfall. We recognise a need to enhance and encourage and support the expansion of a legitimate low rainfall farm forestry industry, particularly across northern Victoria.

Steps in building a low rainfall farm forestry industry in northern Victoria

1. Recognise the beneficiaries of such an industry are in the first instances the broader community through the range of ecological and environmental services that woodlots, shelterbelts, and plantations afford.
2. Understand that farmers do not receive a financial return on their investment in farm forestry for at least 10 years. Also understand that during these 10 years, there are management costs over and above the cost of establishment.
3. Appreciate that the cost of establishing and managing farm forestry should be shared between the broader community and the farming community.
4. Understand the public benefits of farm forestry accrue most effectively and efficiently when they are coordinated and managed by local community groups operating in effective partnerships with NRM agencies
5. Establish appropriate design principles informed by matching the biological requirements of species with the geological, geomorphic, hydrogeological and hydrological science. Build

superior plantations by matching species to landscape character

6. Remove firewood harvesting from public forests. Allow farmers to establish plantations without competition from subsidised public enterprises.

Public benefits of low rainfall farm forestry

Low rainfall farm forestry is not profitable if the focus is on wood production alone (Race and Curtis 2007). Distance from markets, a dearth of infrastructure and very slow growth rates all limit economic feasibility. Market failure demands that plantations deliver multiple benefits that accrue from mixed purpose investment. The case for public investment in low rainfall farm forestry is contingent upon environmental outcomes that include mitigation of land degradation, sequestration of atmospheric carbon, habitat for flora and fauna and so on (Binning, Barker, Meharg, Cork and Kearns 2002)

As a society we have long-passed the point where the future of low rainfall farm forestry should be decided by foresters and left to the discretion of innovative farmers with a concern for the future of the land. To continue on the present course is tantamount to doing nothing. If we continue with this paradigm we do so in the full knowledge that we are fast approaching the 'end game'. The stark reality is that we only have the opportunity for one hardwood rotation left before the exponential growth of human population on planet Earth exceeds the ability of our soils to provide for the people of the planet (Cribb 2007). Public investment in natural resource management is no longer optional, it is essential.

We need to return to that time not so long ago when we believed in community-based management of our natural resources. Low rainfall farm forestry should be driven by the combined needs of a market for wood products and the demand for environmental outcomes. To consider one without the other is unthinkable.

The future depends upon our farmers

Human beings are for the most part very bad at planning for the future survival of their species and atrocious at planning for the future of other species. We are driven by economic and market based paradigms that are destroying the planet. Even now with a little less than 50 years before we over-populate the world we continue in our efforts to completely exploit the resources we rely upon for life. We need to find new ways forward that might avoid societal demise and the inevitable wars certain to play out as we scramble for the last morsels.

If we have any hope of survival as a species we must, as a people, begin to think of farmers as our saviours instead of people that contribute to our demise through the impacts of food production on our soil resources. Farmers should be encouraged and supported and subsidised to build new a new world in which agriculture and forestry contribute to ecological and environmental stability.

We do not need to grow low rainfall farm forestry for the economic benefits of wood production. Instead, these things should flow as the side benefits of growing vegetation that promises sustained ecological prosperity. We need new economic paradigms that recognise the needs of the planet ahead of the needs of the market. Our farmers can deliver this if,

as a society, we support them. This need is fundamental.

If farmers are the key to our future, and our fate as a species is growing much nearer, is it time that we seriously invested in people that have the capacity to make a difference. Farmers grow our food and the plants we need to sequester atmospheric carbon, produce oxygen and control the water balance. It is high time we supported them in some systematic financial way that legitimises their efforts in sustaining the land. We should establish a reasonable cost/revenue share that provides for reasonable incentives and get on with the business of saving the planet. Recognise we are not doing these guys any big favours. In most instances it will be at least 10 years before they get any return on their investment (if ever).

Build the future of low rainfall farm forestry through effective partnerships

The single biggest thing that will get in the road of building a farm forestry industry is the institutional arrangements. Competition between agencies and between communities and agencies, and between communities and other communities has to be overcome. It is not clear how this might be best achieved, but it would seem the natural resource management agencies (e.g. CMAs) are well placed to deal with it.

Investment of public funds in low rainfall farm forestry is primarily a natural resource protection issue. Wood production is a side benefit that flows from that investment.

Matching species with regolith, hydrology and climate

Species selection for low rainfall farm forestry remains a matter of good luck rather than good judgement. Farmers are

told to plant the same species irrespective of land type and geomorphic character.

Species selection and plantation design need to be linked to the hydrological, hydrogeological and geochemical character of the land (Coram, Dyson Houlder and Evans (2000)). We need an improved marriage between the biological science and environmental geoscience. Science has a good deal to contribute to the achievement of environmental and economic goals.

Remove competition for wood production from public agencies

This is, perhaps, the most critical aspect in developing a low rainfall farm forestry industry in the southern Murray-Darling Basin. How can we possibly ask farmers to produce wood products and participate in wood product markets whilst we continue to subsidise the collection of the same from national parks and other public lands. This is a very serious matter that should be addressed without delay.

Plantation development notices and local government

Local government needs to have a policy that sets out where and how private forestry might proceed in each municipality. Which areas are most suited to farm forestry? Which are least suited? Which areas are the most sensitive? What are the threats and how might they be best managed? How does local government deal with plantation development notices to balance the wants and needs of ratepayers and the desires of the forestry proponent?

Discussion and conclusion

This submission addresses the potential for a low-rainfall farm forestry industry in the southern Murray-Darling Basin. It

establishes that such an industry is only viable in circumstances where farmers have the opportunity to co-invest with the broader population in multi-purpose plantations. Low rainfall farm forestry for timber production alone is not economically viable. The benefits that accrue from control of land degradation and the re-establishment of biodiversity get it over the line.

Farm forestry is no longer optional in the southern Murray Basin. Instead it is a critical part of the package of landscape change that we urgently need to adopt if we expect to survive the coming four decades.

The Australian Government has the opportunity to contribute to the development of new farming systems that are less dependent upon monocultures and more attuned to integrated land management that includes farm forestry. It is time we seized the initiative and started working with our farmers to re-build the future.

References

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Race, D and Curtis, A (2007) *Adoption of farm forestry in Victoria: Linking policy with practice*. *Australasian Journal of Environmental Management* 14 (3): 166-178

Appendix A – Kamarooka Case Study

In 2004 the Northern United Forestry Group applied to the Australian Government for a grant that would allow them to attempt to restore a large area of land badly affected by dryland salinity.

The land first succumbed to salinity during the wet years of the mid-1950s. Saline groundwater reached the soil surface. It had been rising since the catchment was first cleared of native vegetation in the gold rush days of the 1860s.

An elevated watertable in the upper catchment pushed saline groundwater to the surface along the interface between the upland foothills and the adjacent Riverine Plains (Jenkin and Dyson 1983).

Large round patches appeared as germination failed in cereal crops. Saline groundwater two thirds the salinity of the ocean rose to within one metre of the soil surface. Capillary action then brought it to the surface killing the vegetation and destroying the soil structure. The topsoil simply blew away exposing the lifeless saline subsoil.

By the early 1970s saline land at Kamarooka had grown from a few patches where the cereal crops failed to 400 hectares of seriously degraded land. A further 600 hectares showed signs of poor health due to salinity.

The saltland became wasteland that prevailed for 50 years before the NUGF took the decision to attempt to restore it.

In 2004 NUGF with the support of a grant from the National Landcare Innovations

Program set out on a journey that continues through to the present day.

The group planned to establish halophytic vegetation on the most saline land and mixed acacia and eucalypts plantations in the adjacent less saline land. They deployed geophysical methods to map soil salinity comparing these with their own observations. They took soil samples and analysed them for salt. They drilled bore holes to check on watertable depth. Finally they subdivided the land and planted trees and native grasses and saltbush.

The group established state of the art electronic monitoring that allowed them to record groundwater responses to treatments, and to observe the biological function of the trees, including sap flow and growth rates.

In January 2007 after long periods with little rain a groundwater recession was first observed beneath the plantation. To the great surprise of NUFG members and the broader Australian scientific community it was evident the plantations were transpiring small volumes of the very saline groundwater and lowering the watertable. By 2009 the watertable beneath the trees was two metres lower than the adjacent land.

The eucalypts planted in the Kamarooka plantation are a mix of *cladocalyx* and *occidentalis* (Sugar Gum and Flat Top Yate). The *cladocalyx* thrives in land with a shallow saline groundwater despite being classified as 'low' in salt tolerance. It soon became clear that waterlogging was the real threat. The trees could withstand salt in their root zone but could not tolerate salt and waterlogging at the same time.

Today the eucalypt trees in the Kamarooka plantation are more than 8 metres tall and they continue to thrive. Additionally, large areas of saline land

now support vigorously growing saltbush and agricultural productivity of the land has been restored.

The record breaking rainfall and floods of 2010 and early 2011 have re-introduced shallow watertables across the entire site, but the saltbush and the trees have survived, and once again the plantations are lowering the watertable.

The Kamarooka site continues to attract visiting scientists from throughout Australia and overseas. Additionally, a wide range of schools, TAFE colleges and universities make an annual trek to the site each year as an educational pilgrimage.

The NUFG Kamarooka project demonstrates that production can be achieved through the integration of trees, halophytic vegetation and traditional agriculture. Moreover, it demonstrates what can be achieved when local communities work together to restore the land.

Community-based land management supported by relatively small amounts of public funding can achieve enormous results, and farm forestry remains an integral part of the equation.

For more information on the NUFG Kamarooka program visit www.nufg.org.au and follow the link to the Kamarooka page.