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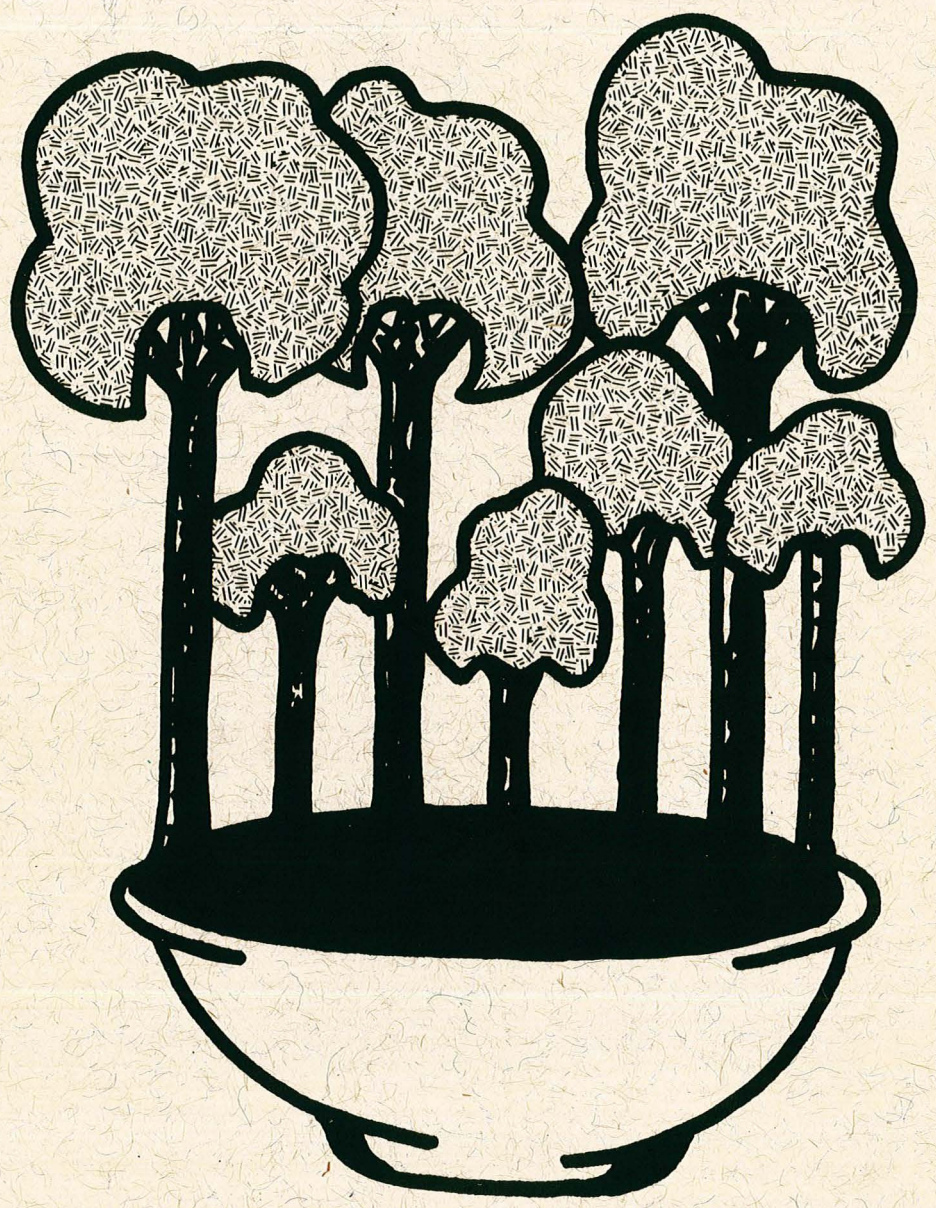

The Need For A National Forest Strategy

OR

Why Can't Our Forests Become Australia's Magic Pudding

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Introduction

Rather than speak directly about the need for a National Forest Strategy, I propose to ask the question ''What is stopping our forests becoming Australia's magic pudding?''

When my wife asked me what my paper to this Congress was about, I mentioned the concept of the magic pudding and she surprised me and said ''Are you sure everybody knows what it means?'' I assume that everybody in this audience has read Norman Lindsay's book at some stage in their career, but for those of you who haven't, the essence of the magic pudding, or one of its essences, was that no matter how much you ate, it never diminished in size.

You have to wonder why, in Australia, our forests aren't our magic pudding because there are no God dictated constraints to that happening. We don't have an absence of soil and water that can grow trees. We grow some of the tallest trees in the world. We don't have a deficiency of clever genes. There are individuals in this country, whether they be in forest management or in research or in forest product marketing or processing, who are some of the most innovative in the world.

I suspect the cause of our failure to realise the full potential of our forests has little to do with the biological factors or our capacity as individuals, but a lot to do with our administrative and political structures which exacerbate our propensity to be gladiators. A cultural propensity which is very useful when we are defending the fatherland or playing cricket, but not very helpful when you are trying to develop synergisms between individuals and organisations. Synergisms - in a world today which has great pressure on its environment, and is composed of nation states which are highly competitive - which are essential prerequisites to success.

Certainly the absence of a National Forest Strategy, which has community support, is a major barrier to us making our forests a magic pudding. But that is not to say that it hasn't been attempted. R Dalrymple Hay in 1912 talked about it at the first interstate Forestry Conference. He called for -

> ''collective consideration in the interests of the whole Commonwealth ... [and though] the laws of individual states for administrative purposes must necessarily be shaped to comply with particular or local conditions ..., from the standpoint of national conservancy, they should provide for the maintenance of a sufficient proportion of forest wealth.''

There have been a number of attempts since to develop a National Forest Strategy and other related strategies, such as a National Conservation Strategy.

The principles of the 1984 National Conservation Strategy are:

- The maintenance of ecological processes and life support systems.
- The preservation of genetic diversity.
- The sustainable utilisation of species and ecosystems.
- The maintenance and enhancement of environmental qualities.

More recently Australia, like many other nations, is attempting to embrace the concept of sustainable development. Indeed this is the theme of this Congress. There are difficulties in defining what is meant by sustainable development, but few people would not agree with the principles set out in a Commonwealth paper on sustainable development -

- integrating economic and environmental goals;
- valuing environmental assets;
- providing for future as well as present generations;
- dealing cautiously with areas of risk and irreversibility, and
- recognising the global dimension.

This year the Standing Committee on Forestry, which includes representatives of all of the State forestry agencies and the Commonwealth Department of Primary Industry, produced a discussion paper on a proposed new National Forest Strategy which incorporated the principles of the Australian Conservation Strategy and the concept of sustainable development.

The proposed objectives of that Strategy are:

- To ensure that Australia's natural forests are maintained as viable ecosystems.

- To ensure the provision of a full range of values and uses of Australian forests on a sustainable basis.

- To facilitate the planting of more forests, both for timber production and to restore and sustain other environmental values.

- To provide a secure basis for the development of commercially viable forest product based manufacturing industries.

- To provide processes for resolving differences in the community about forest management and the balance between different forest uses.

This discussion paper has been circulated to all delegates and I don't intend to speak to it in detail.

As important as these Strategies are, I do not believe that in themselves they will result in us realising the potential of our forests. I don't believe it will be difficult for the community to accept the principles and objectives of any of the above Strategies. Consequently, I intend to focus on our administrative and political structures which I believe cause the log jams that prevent us achieving these clearly desirable objectives.

But firstly I want to briefly outline our achievements and our assets.

Achievements and Assets

The forests we have inherited and the people who work in and value them

We cannot ignore that Australia and the world has major environmental problems. Nor can we deny the fact that nearly two billion dollars of Australia's current account deficit is because we cannot produce sufficient forest products in Australia. We should be able to avoid importing Eucalyptus pulp from Portugal and Chilean Oak (that's Tasmanian Blue Gum) from Chile to Fremantle as veneer to put on kitchen tables to sell to suburban Perth.

But it is important not to ignore our heritage and forget the achievements of our predecessors.

The forest industries were responsible for the early development of Australia and today make an enormous contribution to our economy. The industry generates over eleven billion dollars and employs over 100,000 people.

It is true to say that the forests of Australia have shrunk primarily because of agricultural clearing (and it is important to acknowledge that without that agricultural clearing, which was necessary to create farms, we would not have the living standards we have today). But despite all the stories you hear about the destruction of our forests we still have a large native forest estate. There are over 40 million hectares of native forest in Australia.

These forests in many States - despite the fact that they have been extensively logged for over 100 years - are reservoirs of many of Australia's plant and animal species which have been displaced by land clearing, protect our water catchments and are a major recreation and tourist asset.

In the rush to proclaim plantation forestry as the panacea to our forest management problems, we tend to forget that our predecessors, more than 80 years ago, initiated a plantation program in anticipation of the need to meet Australia's wood requirements. We have, as a consequence of that foresight (some people might say ''act of faith'') a plantation estate of over 900,000 hectares.

Forests are sustainable ecosystems

Of all the industries which are examining their future in light of the requirement for sustainability, those based on the forests are in the most favourable position.

Forests are more efficient solar energy collectors than anything yet that has been devised by man. They, if properly managed, are perfect examples of recycling in action. The only element that is lost from forests in significant quantities is nitrogen. But this is replaced by micro-organisms (which have symbiotic associations with many forest species) by extracting nitrogen from the atmosphere. Even the logs that are derived from forests are, in effect, recycled carbon dioxide.

Forests are not only efficient energy collectors. Logs derived from the forest are converted to usable forest products with a minimum of energy consumption and their production results in a nett reduction in carbon dioxide emissions to the atmosphere (Table 1).

Table 1

To Produce One Tonne of Each Requires

	Energy (KWH equivalent)	CO_2 produced
Aluminium	15 000	25.0
Iron	3 000	2.5
Cement	2 000	0.3
Bricks	700	0.1
Timber	300	-0.2

Provided that it is recognised that forests are dynamic ecosystems and are managed accordingly, it is possible to ensure that all forest uses can be sustained indefinitely.

Thus, provided that the removal of wood does not exceed the increment and that forests are regenerated, wood production can be sustained.

It is also necessary if conservation values are to be sustained to manage the forest. For example, in Western Australian native forests it is probable that the Tammar Wallaby, the Woylie and the Numbat would be at risk if fire regimes were not managed. It is not forest harvesting that threatens these species, but the occurrence of unmanaged fire in the forest areas where they have been confined principally because of predation by introduced animals such as the fox.

Forests have a multiplicity of uses

One of the Australian aphorisms of life is that you cannot have ''two bob each way''. But as Professor David Bellamy has said in a reference to Western Australia's regrowth forests ''you can have your cake and eat it too''.

Forests can be managed to ensure that a number of forest uses can be provided.

Some uses, such as the production of high-quality water, can be accommodated in the same areas of forest all the time. Other uses can be accommodated by distributing them in time and space. At the time of timber harvesting, the forest cannot be used for recreation and conservation, but so long as the forest is regenerated, it can provide recreation and conservation values too. Unmanaged recreation can conflict with conservation values, but by dispersing, managing and alternating recreation sites, recreational use can be made compatible with other values.

New forests

There is also the potential in Australia to massively expand our forest resource by establishing new forests on cleared agricultural land. Not only is the land available to grow trees commercially, but the nation desperately needs trees to repair the land.

In Western Australia we have demonstrated that trees suitable for commercial wood production can make a major contribution to reducing soil and water salination and eutrophication of the waterways by lowering water tables (Figure 1).

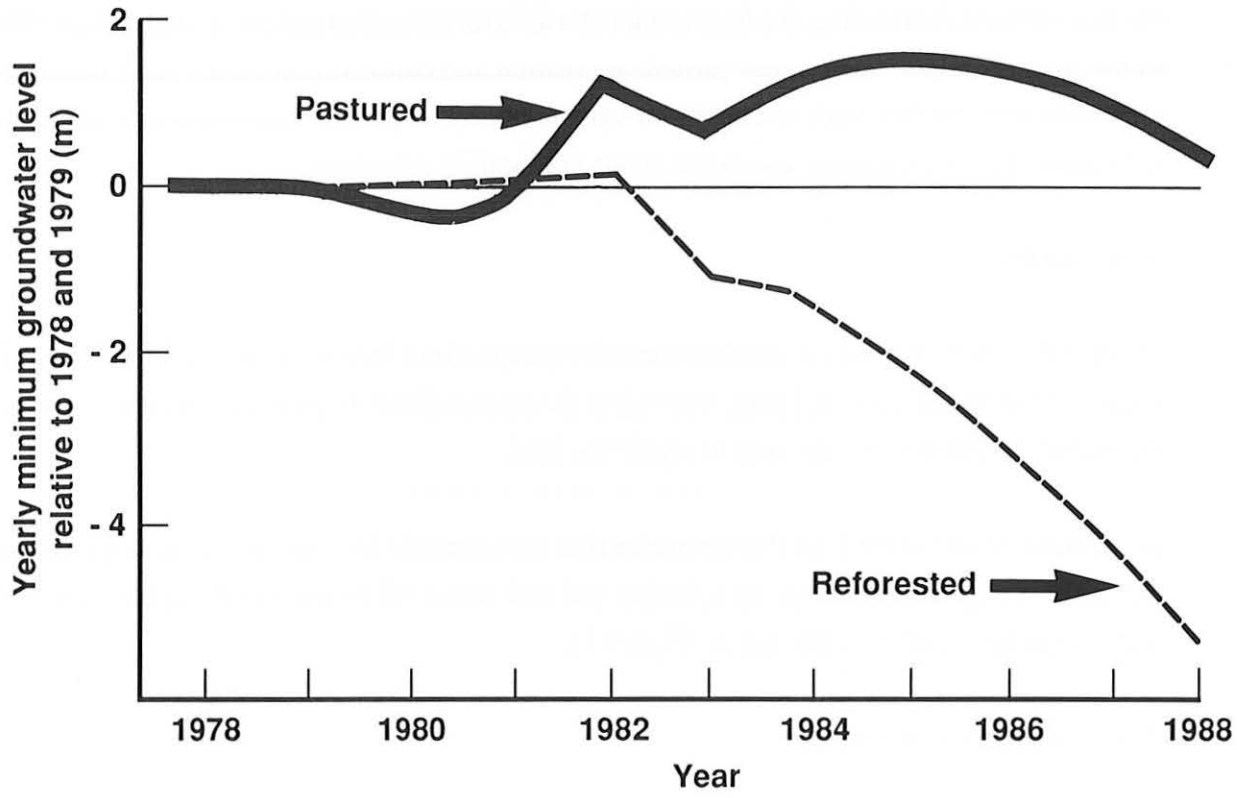
The demand for wood

If we were able to replace the wood we import, the forest industry would have a major contribution to our economy.

But there is also the opportunity to develop a major forest product exporting industry because there is an increasing world demand for wood products. In Japan alone, it is estimated that there will be a deficit of in excess of six million tonnes of high quality wood fibre.

Australia is also perfectly placed with its resource of beautiful hardwood timber to capitalise on the demand for high value quality timber products derived from sustainable forests.

FIGURE 1



Groundwater drawdown at Stene's farm in the Wellington Catchment

Reduction in water table by a commercial stand of *Eucalyptus globulus*.

The problems

It is obvious that where community dissent over forests has reached the stage when decisions on cutting coupes are issues in Federal and State Cabinets that little progress will be made in realising the potential of our forests until there is a new spirit of cooperation.

I do not propose to discuss the politics of Australian forestry, but rather attempt to identify some of the underlying causes of community conflict.

I believe that a significant number of problems are because Australian forests are in transition between old growth and regrowth forests. Every country that ever harvested its forest - whether it was the Greeks or Romans in the past, or the Canadians and Americans currently - will pass through a stage where there is a gap during which the old growth forest cannot sustain the level of harvest long enough for the regrowth forests to reach a size which will provide sufficient logs of the size demanded by the industry geared to old growth logs. The so called normal forest, that is a forest with approximately equal population of different size classes, (Figure 2), is rarely achieved without disjunctions. This together with other related factors has resulted in:

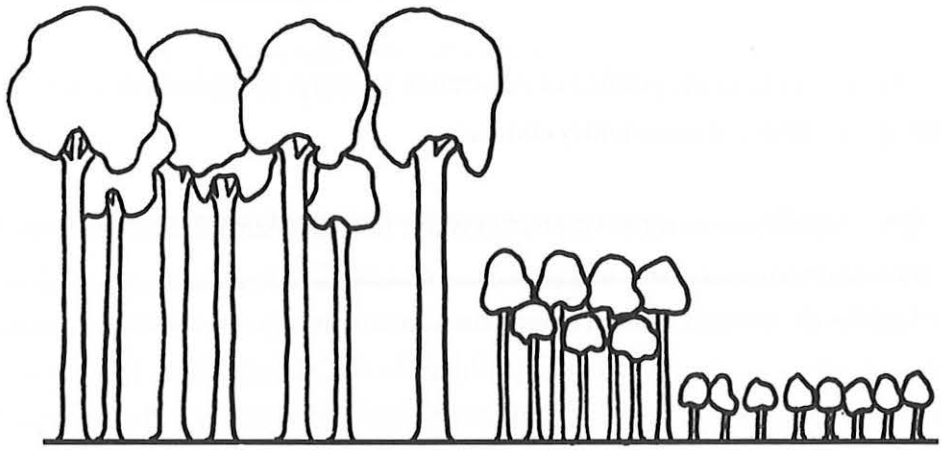
The Lazarus problem

Even though all Australian native forests are being harvested at levels which are significantly below the annual wood increment per year, most forest industries in each State are confronted with declining supplies of traditional 'old growth logs'. Yet in all forests the potential to increase the cut dramatically some 40 to 50 years in the future is large. Hence the industry is potentially faced with a progressive reduction in plant, equipment, market share and personnel until the regrowth forests come on stream, at which time it will be required to rise from what will be a moribund state: Figure 5(1) is a conceptual diagrammatic representation of the Lazarus problem in the southern marri/karri forests of Western Australia.

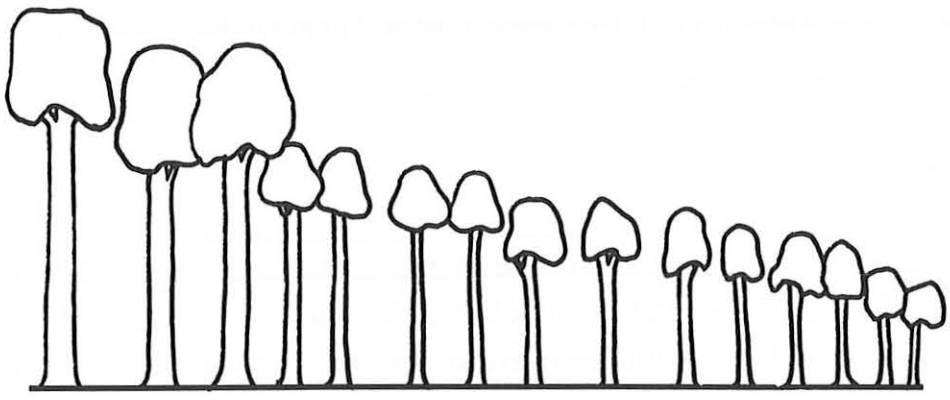
Poor utilisation

The relatively poor utilisation of native forest is in part because the forest industry has in the past been provided with a plentiful supply of large logs and has been geared up accordingly. Consequently, there has been little incentive to maximise the recovery from logs that have been harvested or to utilise the resource left on the forest floor.

FIGURE 2



The structure of Australian forests



The 'normal' forest

Value adding

There are a variety of explanations as to why so small a proportion of our native forest resource has been processed into value added products. In the past, however, the fact that sawmillers could achieve satisfactory return on investment by processing large logs for the domestic scantling market has been a contributing factor.

Sensitivity to economic cycles

One of the consequences of the dependence of the sawmilling sector on a narrow product base which is dependent on the domestic housing market is that it is very susceptible to the cyclic downturns which are a feature of the Australian economy. The forest industry is not alone, but like other industries in Australia this phenomenon does not encourage long term investment.

Land for new forests

The potential to increase the resource base of the industry by extending tree growing onto farms has, in some States, been threatened by the rejection of tree crops as a legitimate land use by local communities.

Solutions

The problems of declining old growth resource, poor utilisation and the lack of value adding can be resolved by integrating forest management, utilisation and marketing. To illustrate the potential of this integrated approach I will use various resource outcomes from the southern marri/karri forests of Western Australia.

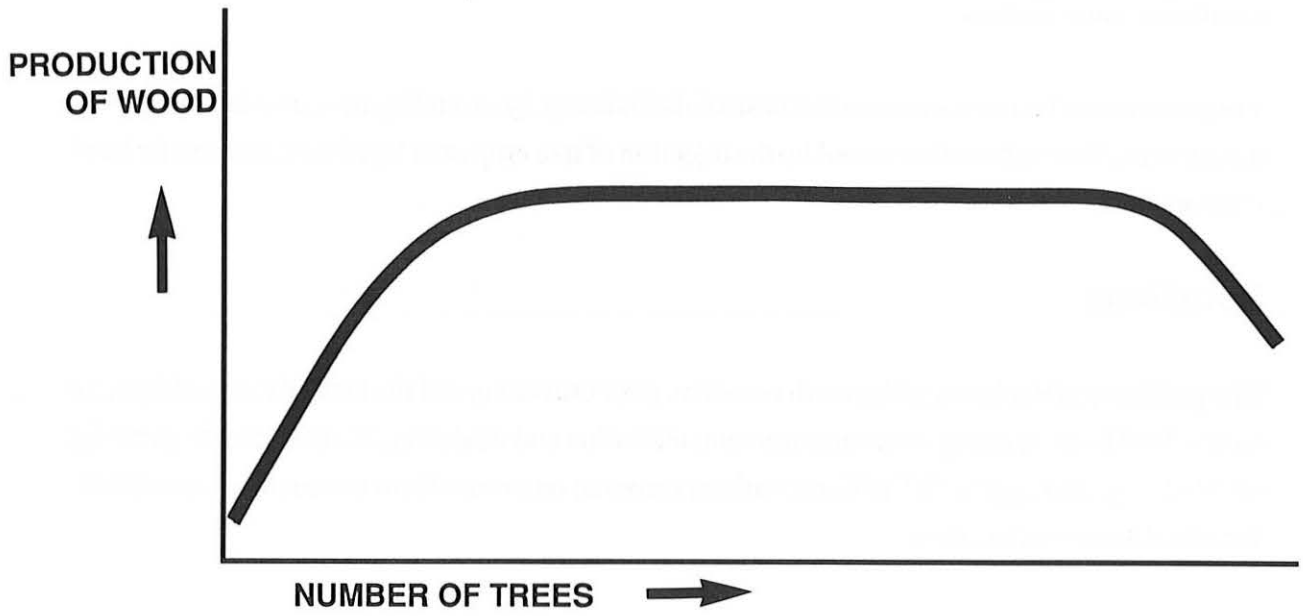
The Lazarus option

The resource scenario that results from a no change option, Figure 5(1), is not conducive to new investment.

The power of thinning

One way to deal with the disjunction in the supply of logs is to bring forward the resource of the regrowth forest by thinning. One of the magical qualities of forests is that the same wood increment is produced over a wide range of densities (Figure 3). This means that with skilful forest management, like a bank, you can withdraw some of your capital and maintain the same interest rate (Figure 4).

FIGURE 3



Increment is the same over a wide range of forest densities.

Thinning mimics the natural process that occurs in developing forest stands. As a forest grows the smaller and less successful trees die to make room for dominant trees. By removing these trees commercially before they die, wood which was destined to rot or burn on the forest floor is utilised. Thinning also results in the residual trees growing at a much greater rate, thus reducing the time required for these trees to produce larger log sizes.

Apart from the wood that is gained by utilising trees which would have died by natural processes, thinning cannot increase the size of the cake. But thinning regimes can be used to change the pattern of resource availability.

Figure 5(2) illustrates the impact of thinning on the pattern of resource supply from the southern marri/karri forests of Western Australia.

The latent resource

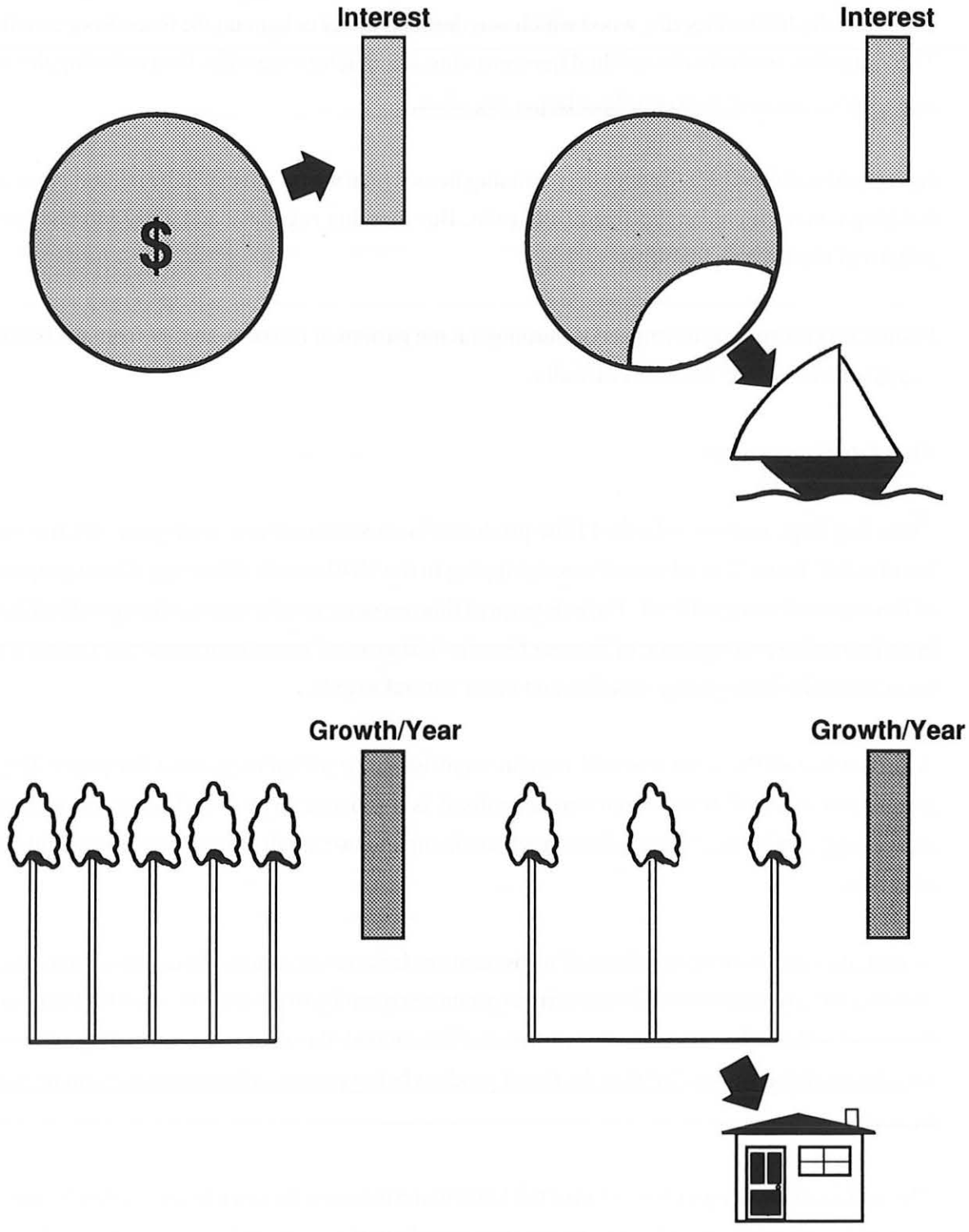
There is a large resource of wood fibre produced in Australian forests each year which is either burnt or left to rot. The advent of woodchipping in the 1970s resulted in a significant proportion of this material being utilised. The existence of this resource and the way it is being utilised in part is an inevitable consequence of the fact that the 'old growth' forest contained many trees which were severely damaged by wildfire and other natural events.

A proportion of this resource will remain unutilisable or utilisable as fibre for paper. But the proportion of wood fibre which can be utilised is a moving target. Marketing and utilisation technology can have a major effect on where the line between utilisable and non utilisable fibre is drawn.

In part, past and current standards of utilisation are because we equate the capacity of a forest to produce forest products with its capacity to produce a quantity of a certain standard of log (usually large and without defect). But it does not matter if the wood fibre comes in small or large sizes with or without defects provided that the forest product being produced is wanted and can be sold at a profit.

The impact of utilising a proportion of the karri/marri resource for sawn timber which is currently utilised for woodchips on long term resource supply in the southern forest of Western Australia is shown in Figure 5(3).

FIGURE 4



It is possible to withdraw forest capital by thinning without reducing annual wood increment.

Value adding

The proportion of the hardwood resource which can be converted to high value products, such as furniture, is also to a large degree a function of utilisation technology and marketing.

Benefits to other forest values

Improvements in utilisation will not only make a major contribution to resolving the problems of industries using the forest resources. If they can be achieved, they will make it possible to apply more sophisticated and sensitive forest management systems which enhance other forest values.

For example, a reduction in the residue left on the forest floor in Western Australia's southern forests and the early thinning of regrowth stands will have a major impact on fire hazard. The reduction in risk from wildfire will permit the introduction of greater flexibility in the location, size and dispersal of cutting coupes. Greater resource flexibility will permit more dispersal of road, river and stream reserves and the enhancing of regrowth forest values by incorporating clumps of old growth forest.

These management techniques will improve the conservation value of the forests managed for multiple uses and will result in a major improvement in aesthetic and recreational values.

Fact or fantasy

These changes in utilisation practices and consequent benefits to all users of the forest are not fanciful because they are happening in Western Australia. For example -

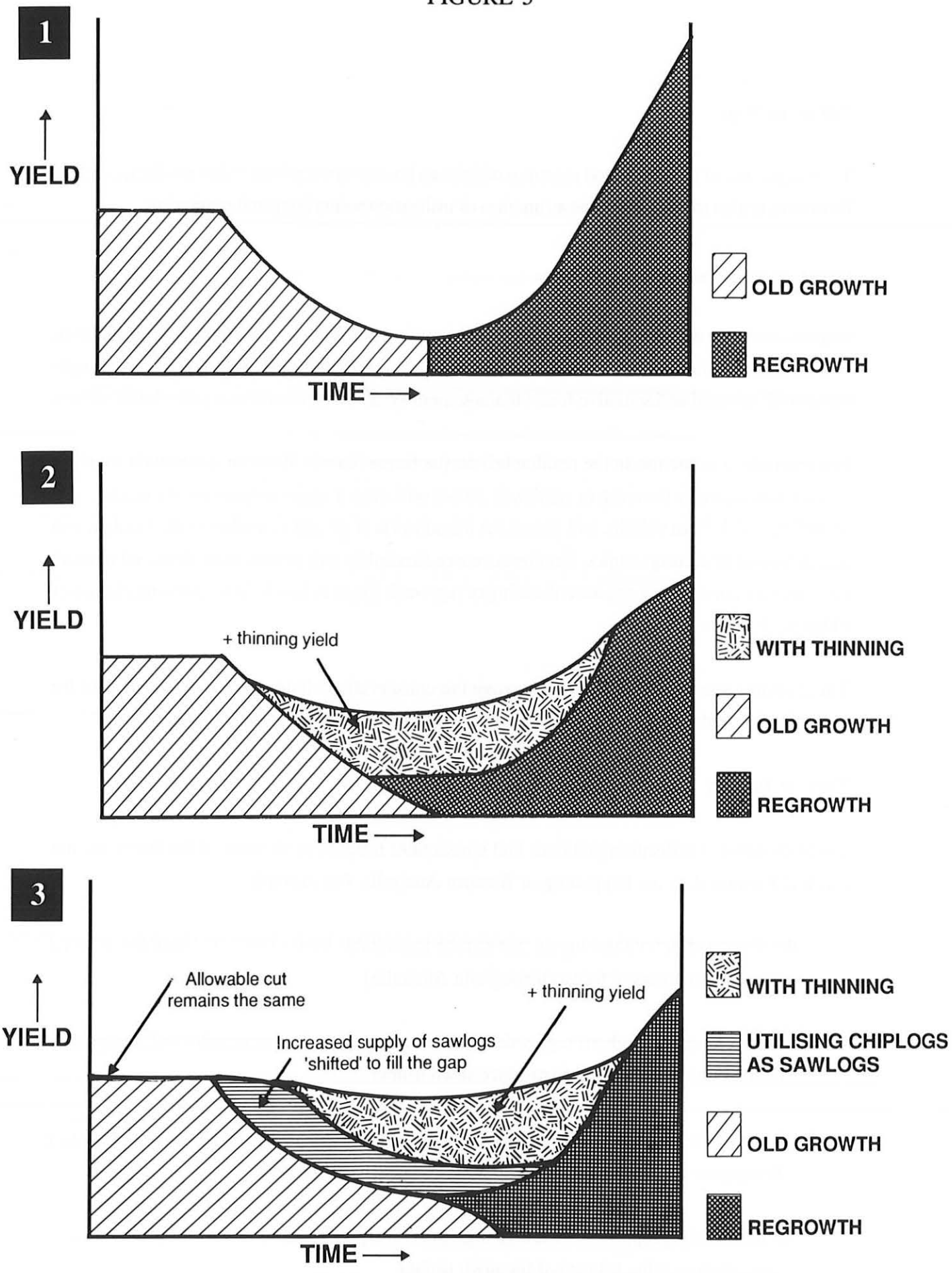
- the data on effect of thinning on tree growth is available for the jarrah and karri forests (and I suspect many more forests throughout Australia)

- twenty year old marri/karri regrowth stands are being thinned commercially and a proportion of the thinnings are used to produce sawn timber

- the area cutover in the southern marri/karri forests has been reduced by 40% over the last five years, yet the production of sawlogs has been maintained

- an increasing proportion of marri logs previously only suitable for the production of woodchip is being processed for sawn timber

FIGURE 5



Options for Long Term Supply of Karri and Marri Sawlogs

- this high quality wooden podium has been produced, using a new technology we have called 'Valwood', from marri logs, which five years ago would have been left on the forest floor to be burnt and one year ago would have been converted to woodchips.

These advances have been made possible -

- by better marketing (for example, there is now an incentive to utilise lower grade logs because of the royalty differential between first and low grade logs)

- new logging technology (for example, new logging machines make it possible to log young regrowth stands efficiently and without damaging the stand)

- new utilisation technology (for example, twin band saws and progressive kilns have made it possible to process logs to value added products, which in the past would have been left on the forest floor or the log landing)

but underpinning all these initiatives in management, utilisation and marketing and an absolute prerequisite to them occurring, was the provision of resource security.

The forest industries are in a period of transition and need to restructure. Restructuring is possible, but it is expensive and requires major investment. No company can make that investment if the resource on which that investment is based may not be available the year after the investment has been made.

Removing the log jams

Much has been written and spoken about the need to better explain to the community the facts about forests, or the impact of the environmental vote in marginal seats. These are undoubtedly important issues that need to be addressed. But there are also some key political and administrative actions which, based on the Western Australian situation, can break the log jam.

Forest management planning with public participation

Much of the conflict over forests in Australia has been stimulated by uncertainty over what forest land is allocated for what purpose and, where they have been produced, a lack of community ownership of forest land use plans.

The formulation of a comprehensive land use management plan, which provide for maximum community participation, overcomes the uncertainty and provides community ownership.

The Western Australian Forest Management Plans, produced in 1987, attracted 4,000 submissions from the public and clearly set out what areas of forest were used for what purpose. The Western Australian Plans resulted in the forest conservation estate being increased by over 300%. The Plans and the accompanying Timber Strategy secured the forest industry resource.

Representative areas of forest, including the best examples of old growth forest must be reserved and excluded from timber harvesting

While it can be legitimately argued that timber harvesting does not destroy forest processes and is compatible with other uses of the forest, it is also true to say that the community should have areas of forest which include representative examples of the 'untouched' old growth age class.

In Western Australia, forests representative of all major ecosystems have been reserved and these reserves include the best examples of 'old growth' forest.

Forest management of multiple use forest must aim to optimise the sum of all forest values

Multiple use of publicly owned native forests is an ace card. Forest management practices which aim to optimise one value at the expense of others will be rejected by the community.

Uncertainty over security must be removed

One of the tragedies of the forest debate is that in many forests significant areas have been excluded from timber harvesting, but they have not been recognised because they have no security. Similarly, it is probable that there is sufficient timber resource to supply the forest industries, but uncertainty over its availability prevents investment.

State and Commonwealth legislation is required to provide security for both the conservation estate and the resource requirement of the industry.

Providing security of resource to the Western Australian forest industries has resulted in investment exceeding $200 million.

Federal legislation

While the constitution clearly reserves land management responsibility to the States, there is need for a national perspective on forestry. A Federal Forest Act which -

- provides for bilateral legislation with each State to remove uncertainty over the security of the conservation estate and the resource

- provides for a Federal Forest Agency responsible for the development and monitoring of standards designed to protect all forest values (how can forestry, environmental and economic goals be integrated when the responsibility for each objective is in different Federal agencies?)

would identify State and Federal roles and provide the basis for a national approach to forest management which was not in conflict with State objectives.

Promoting new forests

There are two barriers which prevent Australia developing new forests to complement the native forests.

Lack of integration of trees into farming

It is not surprising that there is strong local community resistance to using land for growing trees given the way that it has been attempted. Foresters and the forest industries have tried to transplant the practices that were used to establish large plantations on Crown land or large private holdings to the agricultural land base.

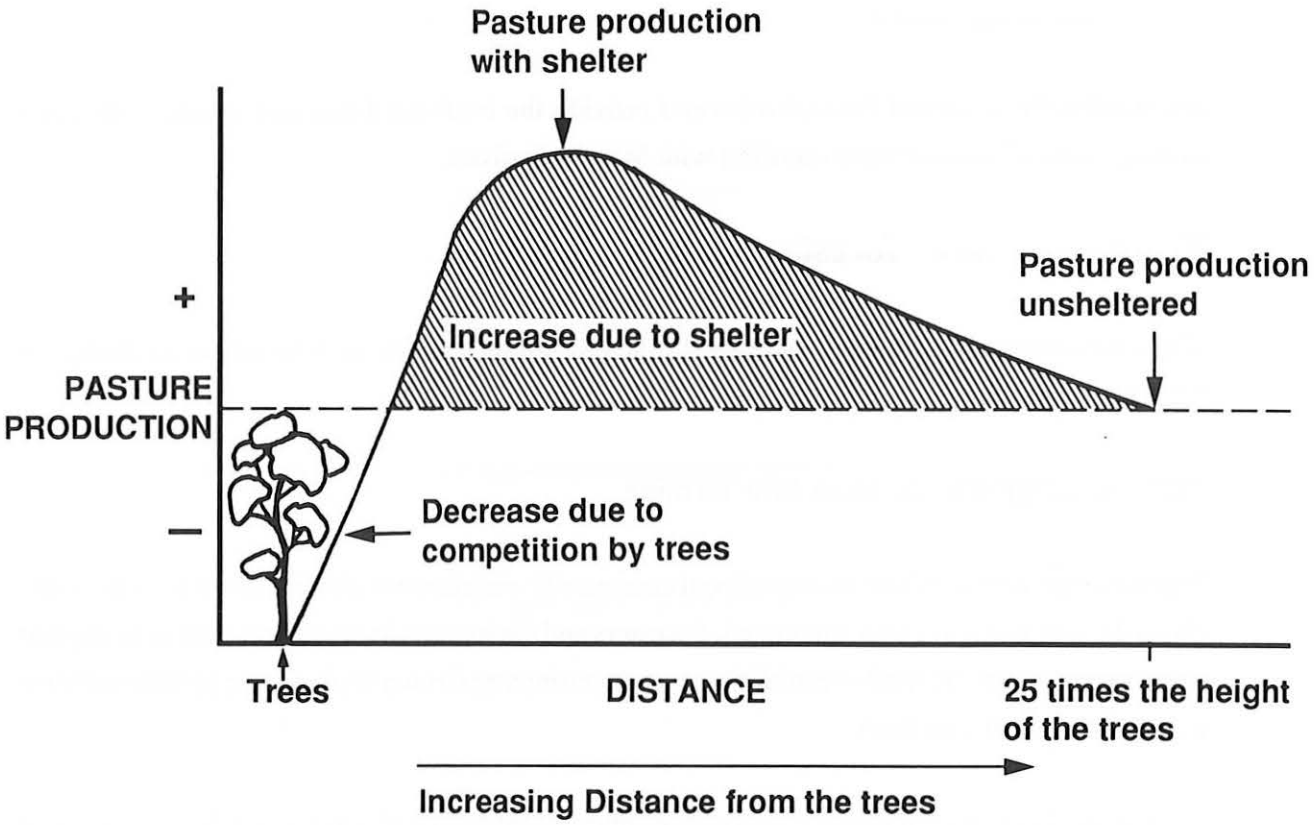
Arguments that trees can generate more economic activity than traditional agricultural crops may be true, but are irrelevant. Shire councils have constituents who are concerned about whether the school bus will continue to service their farms, or whether the local school will be maintained if large forestry companies or State agencies buy whole farms for tree planting and manage them from regional centres.

In Western Australia, after passing through this insensitive phase, the concept of integrating trees into farms has been developed. This involves developing management and financial systems which -

- make the farmer part-owner and manager of the trees on his farm

- planting trees in those areas of the farm where they will grow commercially but which also maximise the benefits to the farmer.

FIGURE 6



Pasture Response to Shelter

It is probable that it will be possible to establish up to 20% of a farm with trees, if they are strategically placed, without loss of nett agricultural production. The potential benefit of trees to agriculture production has not been communicated effectively (Figure 6).

Eight thousand hectares of trees have been established in Western Australia in the past four years on cleared agricultural land, with management arrangements which provide for joint ownership with the farmer.

Reverse intergenerational equity

The large plantation estate which has been established in Australia has previously been the result of Federal and State Government preparedness to invest in forestry. It is unlikely that this source of funding will be maintained and it is certain that it will not be increased.

If sufficient funds are to be obtained from the private sector, investors must be either persuaded to give equity to future generations, or we must devise investment packages which overcome the inherent problems of forestry investment - poor cash flow profiles and lack of liquidity.

It is unlikely that investors in Australia will voluntarily forego the perceived benefits of short term investments. Compulsion is neither fair nor, based on previous experience, successful.

But the real rates of return on forestry ventures (properly managed) are not unattractive.

Modification of the existing tax law, which is a major disincentive to investment in forestry, to allow for the costs of the total afforestation project to be registered as a cost at the inception of the project, specifically for projects which confer environmental benefits to the community, would remove the present inequities and compensate for the unattractive cash flow of tree growing ventures.

There are large quantities of funds accumulating in institutions because of the Federal Government's superannuation policies. Changes in accounting procedures which permit afforestation ventures to be valued in a way which accommodates the requirement for a fund's performance to be assessed quarterly would remove one of the barriers to institutional investment in forestry.

Tree planting schemes funded by these grants and community funded tree planting programs can, and will, make a contribution to meeting Australia's re-treeing objectives. But a change to the administrative and taxation arrangements, which removed disincentives to commercial tree planting, could unleash a large investment in tree planting which would make a major contribution to reversing land degradation at no cost to the taxpayer and create a large, highly profitable export earning industry.

Conclusions

The forests of Australia present an ideal opportunity to demonstrate how integrating economic and environmental goals can bring huge benefits to the nation's environment and economy. There are no biological or commercial barriers to prevent this happening. What is required is a change in our culture and our institutions which predisposes us to conflict and prevents cooperation.