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# ***Changing Ownership and Management of State Forest Plantations: Australia***

Draft prepared by

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For the

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**International  
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**following the International Conference of the same title**

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The conference was jointly organised and run by the Department of Water Affairs and Forestry of the South African Government, the UN Food and Agriculture Organisation and the UK Department for International Development. It is anticipated that this case study, together with several other country case studies and an overview, will be published as a book during 2004.

# Australia

*The Australian case study was prepared by Jacki Schirmer and Peter Kanowski*

Australia presents an informative case study for experiences of State and private plantation forestry development. Its relative lack of native conifers stimulated development of a softwood plantation estate by the State more than a century ago, and plantation forests<sup>1</sup> now supply the majority of Australia's industrial wood. Its federal structure and political and geographic diversity allowed a diversity of institutional arrangements to evolve. While most Australian states maintain a dominant role in the plantation growing sector, private landowners, investors and enterprises have become increasingly important as the roles of plantations have increased and diversified. Australia demonstrates a spectrum of privatisation, from the corporatisation and privatisation of State-owned plantations to the encouragement of private sector investment and public-private partnerships in a variety of forms of plantations. Recent public policy has restated its earlier emphasis on plantations as a vehicle for regional economic development, and identified plantations as a means of ameliorating environmental degradation outside traditional plantation-growing regions.

## 1.1 Introduction: people and forests in a dry continent

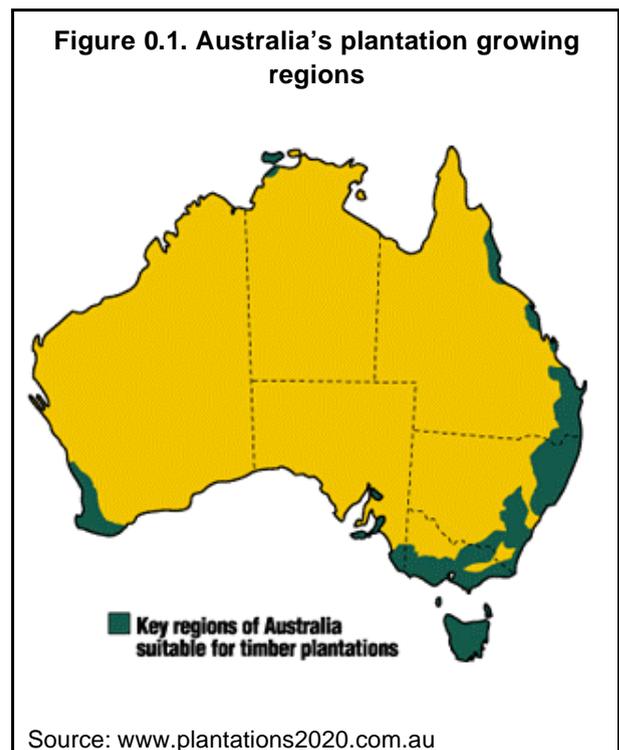
Australia is the driest inhabited continent in the world, with over one-third of the country classified as arid (< 250mm average rainfall annually) and another one-third semi-arid (250 - 500mm rainfall annually).

Both climate and rainfall are highly variable across much of the country, and soils are generally poor. For these reasons, the majority of Australia's forests, and of its 19 million people and their activities, are concentrated in a band within 200-400 km of the eastern, south-eastern and south-western coasts of the continent, and in the island state of Tasmania (Commonwealth of Australia (CoA) 1996, 2002a). Most plantations have been established within this zone, as shown in Figure 0.1

Australia's first people arrived c. 60,000 years ago, and European immigrants followed from 1788. The land management practices of Australia's indigenous peoples - principally their extensive use of fire - altered the distribution of forests, the structure of many of the dominant eucalypt ecosystems, and the forest fauna. Indigenous Australians continue to define their identity as their relationship with their "country"; immigrant Australian society was slow to recognise and acknowledge this, and the formal legal position that Australia had been terra nullis

at the time of British settlement was not overturned until 1993. Consequently, there is little forest formally owned or managed by indigenous Australians in southern Australia, where European settlement is longest established and most intensive.

The displacement of indigenous people by European settlers from 1788 thus changed the forests significantly. European immigrants also altered the forests directly and profoundly— through their



<sup>1</sup> The terms 'forest plantations' and 'plantation forestry' are used throughout this report to refer to stands of trees planted for commercial wood production. They are referred to in this way to distinguish them from other types of plantations.

conversion to agriculture, their exploitation for wood and other products, the introduction of exotic animals and plants, and the associated disruption of ecosystem processes.

## **AUSTRALIA'S NATURAL FORESTS**

Australia's natural forests<sup>2</sup> are extensive, diverse and globally unique, but now occupy only 20% of the country's land area. The Australian biota have high levels of endemism, and the country is ranked among the top dozen globally in terms of the significance of its biological diversity.

The present extent of Australia's forests is some 156 million ha (NFI 1998), representing c. 60% of the area forested at the time of first European settlement. The majority, some 112 million ha (72%), of Australia's natural forests are defined as woodland<sup>3</sup>, and have little direct commercial role other than in on-farm use and for niche products such as sandalwood. Despite substantial rates of both commercial and non-commercial reforestation, there is still a net national loss of natural forest annually, as a consequence of the conversion of c. 400 000 ha of forest annually to agriculture<sup>4</sup>, principally in the open forest and woodland formations in the state of Queensland (CoA 2002).

Nationally nearly 30% of Australia's natural forests are privately owned and managed, although there is considerable variation between states. A further 40% are formally under public ownership, but are held and managed under lease by the private sector, principally for grazing, with varying forest rights and responsibilities. The remaining 30% are publicly owned and managed: some 11% of natural forests are in conservation reserves; some 9% are managed for multiple use, including wood production; and around 10% are held under other tenures<sup>5</sup>, including those managed by or for indigenous Australians (NFI 1998).

The distribution of these tenures varies widely between states and ecosystems. For example, most privately-owned forests, and most forests managed under leasehold, are in northern Australia, in the Northern Territory and Queensland.

## **PLANTATION FORESTS**

The state forest agencies responsible for management of natural forests also began to develop Australia's softwood plantations, recognising the relative lack of native softwoods and the apparently poor performance of most eucalypts in plantation culture (Carron 1990). Commercial plantation forests have been established in Australia since the 1870s, and their expansion to substitute for imported softwoods is regarded as one of Australia's forest policy successes (Carron 1990, Dargavel et al 1998). Until the early 1980s, they were established principally with exotic softwoods on sites converted directly from "less productive" natural forests; sites already cleared for agriculture were deemed too valuable for trees. Over the past 25 years, plantations have increasingly been established on sites previously cleared for agriculture, as natural forest sites became increasingly valued for their other values. More recently, plantation establishment in Australia's principal agricultural zones has been seen as a means of both addressing environmental degradation and diversifying farm incomes and regional economies (Williams et al 2001).

Almost all Australian plantations are rain fed on sites which receive more than 750 mm of rainfall annually; small areas have been established under irrigation from wastewater and, on an experimental scale, from water allocated to agriculture. New forms of planted forests adapted to the highly modified farmed environments in lower (c 500-700 mm annually) rainfall zones have been developed for some environments and farming systems, principally in Western Australia (Harwood and Bush 2002), and are the subject of significant research and development in other regions (Williams et al 2001).

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<sup>2</sup> used here to also include woodlands, unless where otherwise stated. The definition of forest used by Australia's National Forest Inventory is for "an area ... dominated by trees ... [with a] mature stand height exceeding 2m and ... crown cover of overstorey strata about equal to or greater than 20%" (NFI 1998).

<sup>3</sup> between 20-50% crown cover (NFI 1988).

<sup>4</sup> 1999 data; the 5<sup>th</sup> highest rate globally (CoA 2002)

<sup>5</sup> these tenures commonly preclude industrial wood production.

## 1.2 Legislation and policy

For the first century of European settlement, the Australian States were colonies of Britain. When they federated to form the Commonwealth of Australia in 1901, the 6 (now 8) States and Territories retained authority over natural resource management. State forest agencies were established, in various guises, soon after, with responsibilities to both protect and manage natural forests and to develop plantation forests (Carron 1985, Dargavel 1995). The role of the Commonwealth government in natural resource policy has evolved slowly, though significantly, since then.

### COMMONWEALTH GOVERNMENT

The Commonwealth Government has no direct powers over land management in Australia, except on the small area of land under Commonwealth tenure. Despite this lack of direct powers, the Commonwealth has nevertheless exerted considerable influence over natural resource and forest policy in the States in a number of ways. In relation to plantations, these have included (Carron 1985, Cochrane and Gerritsen 1990, Dargavel 1995, NRRPC 2001):

- ❑ **Distribution of funds:** tying budget allocations to the States to specific purposes, and making grants to the States for particular activities. Examples of this have included the provision of grants for programs including the Softwood Forestry Agreement Acts in 1967 and 1971, the National Afforestation Program 1988-90, the National Plantations Advisory Council, the Farm Forestry Program from 1995, and funding for Regional Plantation Committees operating nationwide since 1996;
- ❑ **Commonwealth-State bodies working to develop national policy:** the Australian Forestry Council, formed in 1964 with Commonwealth and State representation, has worked to develop common agreement on plantation policy and initiated the Softwood Forestry Agreement Acts in 1967 and 1972. The Commonwealth and States also work together at Ministerial and Department Head level through what is now known as the Forestry and Forest Products Council (FFPC; CoA 2002b). The FFPC's predecessor, the Standing Committee on Forestry of the Ministerial Council on Forestry, Fisheries and Agriculture, developed Australia's *National Forest Policy Statement* (CoA 1992);
- ❑ **Joint Commonwealth-State initiatives:** The 1997 *2020 Vision for Plantation Forestry in Australia* (MCFFA 1997) is the primary example of this, in which the Commonwealth and State Government and forest industries developed an agreement on a goal of trebling Australia's plantation estate by the year 2020;
- ❑ **Incentives for the private sector**<sup>6</sup>: Incentive mechanisms used to promote forest plantations in Australia have been reviewed by Miller *et al* (2002). They include industry and trade policy instruments and taxation regimes; the latter have been particularly significant in boosting recent private sector plantation investment, and;
- ❑ **Research and development:** plantation sector R&D is funded, in part, through various Commonwealth funded programs, such as the Research and Development Corporations (eg that for Forests and Wood Products; FWPRDC 2002) and the Cooperative Research Centres (eg that for Sustainable Production Forestry; CRC-SPF 2002). The majority of R&D funding is joint with the forest industries and Commonwealth and State agencies.

The Commonwealth also has powers over exports. It has used this power to place export controls on timber, setting quotas for export (principally for native forest products) under the 1982 *Export Control Act* implemented in response to concerns about the environmental impacts of native forest harvesting

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<sup>6</sup>The term 'incentives' is used here to refer to mechanisms by which the government intervenes to change market prospects for particular activities. They may be provided to overcome inherent disadvantages faced by particular industries. This is the case in the plantation sector, where the taxation settings used aim to overcome the disincentive to investment caused by the long time before return from investment in plantations.

in Australia. These controls are not removed until the Commonwealth is satisfied forest and plantation management is being undertaken sustainably<sup>7</sup>.

## **STATE GOVERNMENTS**

Cochrane and Gerritsen (1990) described the role of the State Governments in forest (including both native forest and plantation) management as:

“The present position of the State in forestry is as majority supplier and regulator of the industry. Its role is defined by a number of major attributes: ownership; control of prices; regulation and supervision of forest practices; arbiter of disputes regarding forest management; determination of land-use; and provider and/or protector of “social” benefits. In addition, the state has a substantial indirect influence on forestry activities through fiscal, trade and tax policies, research and development funding, and environmental policies (Cochrane and Gerritsen 1990: 7).”

The State governments have direct powers to legislate for land management, and a variety of legislation affecting plantation management has been passed in each State. Wilkinson (1999) reviewed forest practices systems generally and for five Australian states, and Stanton (2000) reviewed those for Australian plantation forests. Most have recently been - or are in the process of being - developed as more contemporary “new generation” instruments (Gunningham and Sinclair 2001), consistent with international environmental management system standards, and relying more on self-regulation with independent audit (Wilkinson 1999). In most States, Codes of Practice for forest management - which typically define acceptable practices for establishment, management and harvesting of plantations and meet or exceed the requirements of all relevant legislation in that State - have been implemented. However, there remain differences in many Australian states between the regulatory treatment of public and private forests, and between that of plantation forestry and traditional agricultural land uses.

The substantial increase in legislation relating to environmental management since the 1960s has led to concerns on the part of many associated with the plantation industry that ‘green tape’ has become an impediment to plantation forestry expansion. Different states have responded to these concerns in different ways, as the examples below illustrate:

### ***New South Wales***

Until 2000 in NSW, private growers had to obtain up to 10 or more licences, approvals or permits under the requirements of five different Acts before being able to establish a plantation (DLWC 2001). There was concern that this resulted in private investors being unwilling to invest in plantations; and that the major State agency establishing plantations, State Forests of New South Wales (SFNSW), was also adversely affected by this ‘green tape’. In 2000, the NSW Government passed the *Plantations and Reafforestation Act* which aimed to bring together all the different requirements of other legislation, and made the Department of Land and Water Conservation the sole consent authority for establishing new plantations (DLWC 2001).

### ***Western Australia***

In Western Australia, in contrast, there are still several agencies which may potentially regulate the establishment of new plantations, rather than a single consent authority. However, the requirements of different legislation have been consolidated and interpreted in the Code of Practices for Timber Plantations in Western Australia, which has been in place since 1997. The Code is a voluntary industry code, which has been committed to by most companies, and which assists those companies

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<sup>7</sup> The methods used to evaluate sustainability of management differed for native forests and plantations. For plantations, sustainability has been evaluated through a review of codes of practice for plantation management in different States by the Commonwealth Scientific and Industrial Research Organisation (CSIRO). For example, in Western Australia (WA), export controls over plantation timber were removed in 1997 after the implementation of the *Code of Practice for Timber Plantations in Western Australia*, that satisfied the environmental requirements of the Commonwealth (Anderson 1997). Plantation export controls remain in place in Queensland and the Northern Territory.

by setting out how they should comply with relevant legislation and where a permit or approval may be required from particular agencies.

### **Tasmania**

In Tasmania, the forest practices system is the principal regulatory mechanism for forestry on all tenures. It is administered through a single body, the Forest Practices Board (FPB), under the *Forest Practices Act 1985*. The *Forest Practices Code* sets out how forest practices – in both native forests and plantations, and on public and private tenures – are to be conducted to provide appropriate protection to the environment. The FPB appoints Forest Practices Officers, “who are responsible for planning, monitoring and certifying that Forest Practices Plans are prepared and implemented in accordance with the Forest Practices Code and ... are also responsible for taking corrective action and enforcing the Act as necessary ...” (FPB 2000). Such plans are required prior to the conduct of any forestry operation, including vegetation clearing, on public or private land.

### **LOCAL GOVERNMENT**

Local government has planning powers over privately owned land, but no powers over publicly owned land. Therefore, it has played no part in the regulation of State-owned plantations. It does play a significant role in regulation of privately-owned plantations in some States. One of the objectives of the *2020 Vision for Plantation Forestry* has been to ensure the controls applied by local government on the establishment and management of plantations are reasonable and relatively consistent across different local governments. Some States, for example Victoria, require plantation companies to submit plans to local government before establishing plantations; others have encouraged plantations to be considered an ‘as of right use’ in agricultural zones. In Tasmania, private landholders may apply to have land declared a “Private Timber Reserve”; if they are successful, forest management decisions associated with that land are removed from local government control, although they must comply with relevant State legislation regarding forest and land management.

In some areas, where there have been community concerns over the establishment of plantations on privately owned agricultural land, local governments and some members of rural communities have suggested that local government should be involved in approvals processes for plantation establishment, as a way of ensuring plantations are established in areas where they will have a minimum of negative social, economic and environmental impact (Schirmer 2002a).

### **REGULATORY ROLES OF DIFFERENT GOVERNMENTS**

In general, regulation of plantation forestry at State level has focused on regulating the environmental impacts of plantations. At the local government level, however, there have been some attempts to implement planning policy relating to the location and type of plantations established, on the basis of the perceived potential social and economic impacts of those plantations. This has occurred in response to concerns expressed by rural communities about the impacts of large-scale plantations on rural social and economic structures, and has often proved to be controversial. Many farmers believe planning guidelines based on economic and social preferences represent an unfair degree of regulation of their choice of land use; similarly State and Commonwealth policies such as the *2020 Vision for Plantation Forestry* seek to ensure that there are no differential impediments to establishment of plantations, and such planning restrictions are seen in that light. In some recent cases, local government planning decisions that placed restrictions on plantation establishment have been overridden by the State government as they were considered to be inconsistent with the *2020 Vision* (Schirmer 2002a). Similar issues have also recently arisen in some plantation regions in relation to concerns about the water use of forest plantations relative to that of other agricultural land uses. These tensions between plantation forestry and other forms of primary production pose challenges to governments seeking to balance the concerns of some members of rural communities about plantations with the wider public policy intent to provide a ‘level playing field’ for plantation establishment.

## 1.3 Australia's plantation industries

### CONTRIBUTION OF PLANTATIONS TO THE NATIONAL ECONOMY

Australia's forest industries have been estimated to contribute approximately 1% of Australia's Gross Domestic Product (GDP) (NFI 1998). This reflects the contribution only of the wood-based forest industries and does not include the contribution to GDP of other industries which are large users of wood-based forest products, such as the construction and building industries.

In volume terms, Australia is a net exporter of forest products, with a net export of 4.7 million cubic metres of forest products in 2001; in terms of value Australia is a net importer, importing a net \$1,622.35 million of forest products in 2001. This reflects the low value of a large proportion of the wood products being exported from Australia (ABARE 2001), the majority of which are eucalypt woodchips.

It is difficult to determine the value of the contribution of plantations to the national economy, as neither the Australian Bureau of Statistics (ABS) or Australian Bureau of Agricultural and Resource Economics (ABARE) separate their reporting on forest products industries into plantation and native forest wood sources (Clark 2002).

Burns *et al.* (1999) estimated that, in 1996-97, plantation-derived forest products comprised \$3.9 billion of the approximately \$6 billion of forest products produced by Australia's forest industries, and that around 16,000 people were employed in plantation management and processing, comprising around one quarter of the total number employed in the forest industries. The amount of labour per dollar output is low compared to native forest-based industries due to the less labour-intensive nature of the larger-scale processing plants used by the plantation sector, and the higher levels of value-adding in the plantations sector.

Clark (2002) has disaggregated Australian production of wood and wood products by wood source. Her estimates of the proportion of different products sourced from plantations are summarised in Table 0.1.

**Table 0.1. Australian production of wood and wood products from plantations 1989/90 and 1999/00**

	Plantation production ('000 m <sup>3</sup> )		Plantation-sourced product as a percentage of total (plantation and native forest) product	
	1989/90	1999/00	1989/90	1999/00
<b>Log removals</b>	6704	13000	38	54
<b>Domestic sawn timber and wood panel production</b> (volume of finished product)	2304	4307	55	75
<b>Wood for domestic pulp and paper production</b> (volume of roundwood inputs)	2080	1976	65	73
<b>Other wood products</b> (volume of finished product)	334	484	42	69
<b>Australian production of unprocessed wood – chips and logs</b> (volume is roundwood equivalent)	283	4279	6	41
<b>% of wood exported unprocessed</b>			4	33

Source: Clark (2002)

It is clear that plantation production as a proportion of total production has increased rapidly in the past decade, and now provides the majority of wood used in most processes.

## CONTRIBUTION OF PLANTATIONS TO REGIONAL ECONOMIES

There are few studies of the contribution of the plantation forestry sector to Australian regional economies. The most comprehensive of the plantation industry itself was that conducted for the Oberon region of NSW, a major softwood plantation growing and processing centre (Dwyer Leslie and Powell 1995); more recently, Wareing *et al* (2002) reviewed the socio-economic importance of the timber industry, based on both native and plantation forests, in North East Victoria, and Petheram *et al* (2000) assessed the socio-economic impact of land use change from agriculture to plantation forestry in South West Victoria. There have also been more general reviews of aspects of the Australian primary industries, such as Stayner's (1999) and Williams *et al*'s (2001) assessment of value-adding and the potential of plantation forestry in lower rainfall zones, respectively.

The conclusions of these studies and reviews are broadly consistent, suggesting that investment in plantation growing and processing injected additional capital, and associated employment opportunities and flow-on benefits, into regional economies. However, unless value-adding processing facilities were established within the region, the social and economic benefits were relatively modest and transitory. In the South West Victoria case, a mature plantation forestry industry (*ie*, one in which there is an ongoing cycle of harvest and replanting) generated per hectare labour demands around twice those of land use alternatives typical of many plantation regions in Australia – beef or sheep grazing, or broadacre cropping. Conversely, alternative land uses limited to a more restricted range of sites, but with which plantation forestry also competes in some regions – *eg* dairying, horticulture or viticulture – would typically have higher per hectare labour demands than forestry.

The most significant employment and regional economic and social benefits, however, are generated by investment in value-adding processing. As these facilities based on plantation forest resources are increasingly large-scale and capital intensive, there are only modest – albeit regionally significant – direct employment benefits from their expansion; these are also concentrated at particular locations (typically, the larger regional centres) rather than across the region. Much of the employment and economic growth potential is dependent on the business clustering associated with large-scale plantation growing and processing (Stayner 1999).

In these terms, the contribution of the plantation forestry sector to Australian regional economies largely follows a pattern typical of other broad-scale Australian primary industries.

## THE PLANTATION ESTATE

Australia's plantation estate has changed considerably over time. Experimental plantations were established as early as the 1880s, although it took some time to find appropriate species and silvicultural techniques that would allow establishment of productive plantations for timber (Carron 1985). The history of plantation development is discussed in subsequent sections.

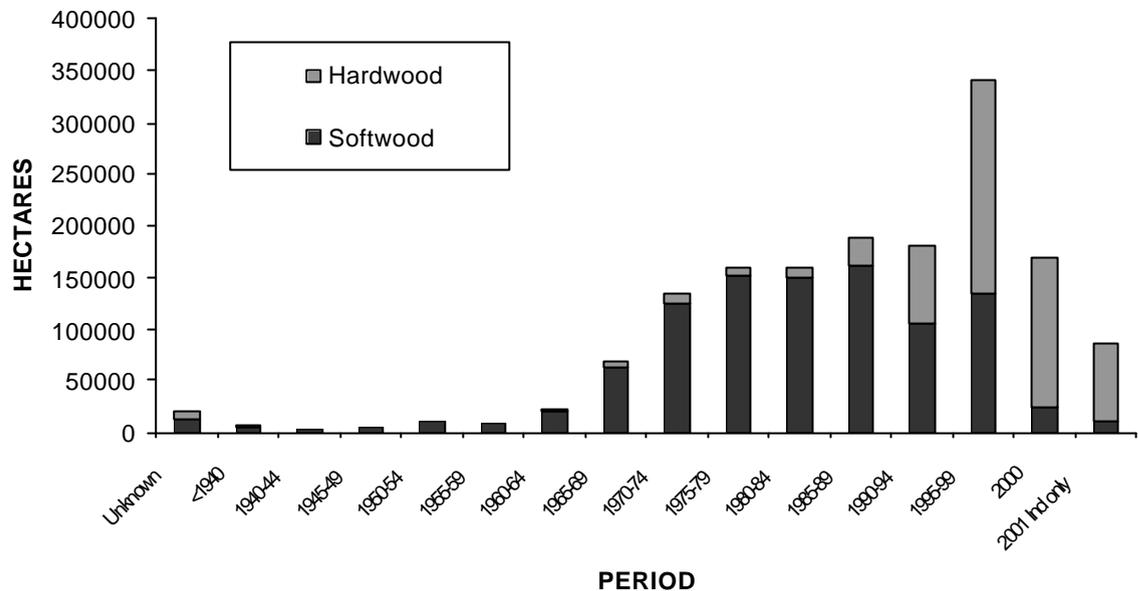
Australia's total plantation estate at the beginning of 2002 was estimated to be 1,568,900 hectares, of which 62% are softwoods – principally the exotic taxa *Pinus radiata* (74%), *P elliotii*, *P caribaea* and their hybrid, *P pinaster*, and the native *Araucaria cunninghamii* – and 38% are hardwoods – almost all *Eucalyptus*, and predominantly (62%) *E globulus*, with lesser areas of *E dunnii*, *E grandis*, *E nitens*, *E pilularis*, *E regnans*, *Acacia mangium* and *Corymbia maculata*<sup>8</sup> (NFI 2002). Softwood plantations are grown on rotations of c. 25-45 years with the primary goal of solidwood production; *E globulus* and *E nitens* plantations are grown on short rotations of c. 10-15 years with the primary goal of pulpwood production (Wood *et al*. 2001).

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<sup>8</sup> formerly *Eucalyptus maculata*

Figure 0.2 shows the pattern of establishment of hardwood and softwood plantations over time in Australia. Up to the 1980's, the plantations established were predominantly softwood plantations. Since the 1980s, and particularly since 1990, hardwood species have increasingly been established, reflecting the rapid expansion of *E globulus* and *E nitens* plantations in southern Australia.

**Figure 0.2. Area of plantations by planting period in Australia<sup>1,2</sup>**



Source: Wood *et al.* (2001); NFI (2002)

<sup>1</sup>The figures up to 2000 show the standing plantation estate by planting period as at 2000; the planting period in some cases indicates the most recent planting, rather than the year in which the first rotation of the plantation was established

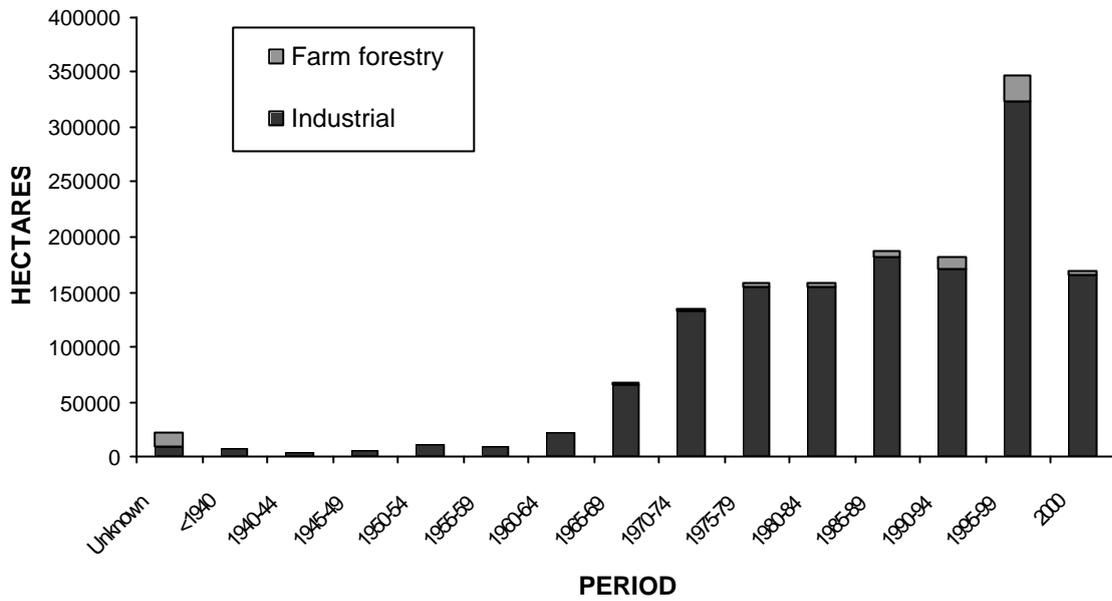
<sup>2</sup>The figures up to 2000 include both industrial and farm forestry plantings; 2001 figures include only industrial

Some 95% of Australia's plantation estate are industrial plantations, and 5% are classified as various forms of farm forestry; amongst the latter are oil mallee eucalypts grown principally in extensive alley farming systems (Wood *et al.* 2001). Most farm forestry has been established since 1980, as can be seen in Figure 0.3. The approx. 67,000 hectares of small-grower plantations established to 2001 and shown in Figure 0.3 do not include approximately 11% of industrial plantations nationally that have been established under forms of joint ownership between investor and landowner, or on land leased from the landowner (Wood *et al.* 2001).

Figure 0.4 shows the area of plantations established by land and tree ownership. Nationally, there has been a significant shift over the past three decades to private ownership of plantations. Fifty six percent of the current plantation estate is on privately owned land, while c. 54% of the trees are privately owned, 6% are jointly owned by public and private organizations, and 40% are publicly owned (NFI 2002). In the 1960s, in contrast, around 75% of plantations were owned by state forestry agencies. There remains considerable variation between the states, with private ownership dominant in the Northern Territory, Tasmania, Victoria and Western Australia (c. 60%, 57%, 97% and 80%, respectively), and public ownership dominant in the ACT, New South Wales, Queensland and South Australia (c. 100%, 77%, 90% and 57%, respectively)<sup>9</sup> (NFI 2002).

<sup>9</sup> Private ownership figures here refer to private land ownership; on some of these plantations the trees may be partly owned by public agencies

**Figure 0.3. Area of industrial plantations and farm forestry in Australia over time<sup>1,2</sup>**

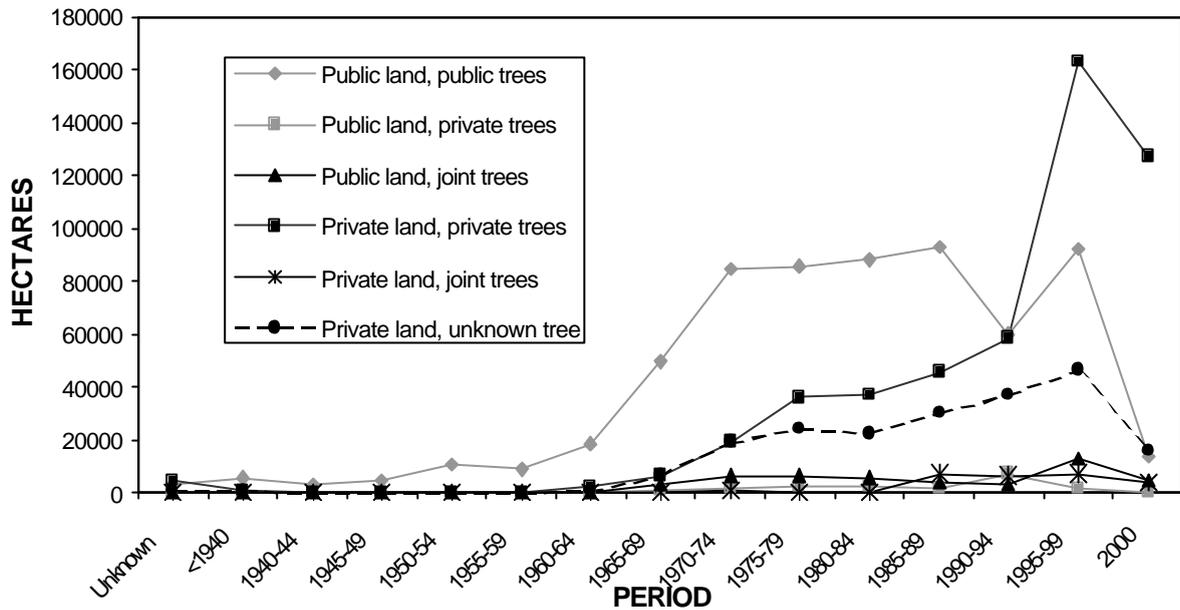


Source: Wood *et al.* (2001)

<sup>1</sup>The figures up to 2000 show the standing plantation estate by planting period as at 2000; the planting period in some cases indicates the most recent planting, rather than the year in which the first rotation of the plantation was established

<sup>2</sup>Industrial plantations refer to plantations established by growers who manage a combined total estate of > 1000 hectares, including joint ventures where one partner is a large grower and some industrial companies with estates of < 1000 hectares. Farm forestry refers to plantations owned outright by individuals who have a total plantation estate of under 1000 hectares

**Figure 0.4. Area of plantations in Australia by land and tree ownership**



Source: Wood *et al.* (2001)

The figures up to 2000 show the standing plantation estate by planting period as at 2000; the planting period in some cases indicates the most recent planting, rather than the year in which the first rotation of the plantation was established

Around 20% of plantations are located in each of the states of New South Wales, Victoria and Western Australia, and around 12% in each of Queensland and Tasmania. There is little quantitative data on the extent to which trees have been established on farms for non-commercial purposes in Australia, although it is known that a large proportion of rural landholders have established some trees for amenity and environmental purposes on their properties (Alexander *et al.* 2000).

The majority of the total area of Australia's plantation estate is owned and/or managed by a relatively small number of organizations. State forest agencies generally remain the largest single owners of forest plantations, despite the increasing trend towards private ownership of plantations. Some private growers, particularly private investment companies such as Timbercorp and Great Southern Plantations, have been increasing the size of their estate rapidly over the past decade (PTAA 2001).

### THE PLANTATION PROCESSING INDUSTRY

There are approximately 670 hardwood mills and 270 softwood mills producing sawn timber in Australia. The majority of the former process only timber from native forests, and the latter process only plantation timber. Softwood mills tend to be larger and more integrated with other processing facilities than are hardwood mills. In addition to the sawn timber mills, Australia also has 22 mills producing pulp or paper products and 30 veneer and board mills; a large proportion of these process plantation products (AFFA 2002). Several woodchip mills operate in Australia. While these were initially established primarily to woodchip native forest timber, many now also use plantation-sourced logs. In 2002, the Albany Plantation Export Company (APEC) began exports from its new woodchip mill in Albany, which uses entirely plantation-sourced eucalypts (APEC 2002).

### STATE-OWNED PLANTATIONS: DEVELOPMENT AND EVOLUTION 1880-2002

This section discusses that part of the sector which is 'predominantly public' ie plantations owned and/or managed by State agencies. It includes initiatives taken by the State sector to involve the

private sector in the plantation industry. The chronology of State involvement falls into five main periods, of:

- ❑ experimentation with potential plantation species and their establishment (1880-1920);
- ❑ initially small, and subsequently larger, scale establishment of softwoods by individual states (1920-1967);
- ❑ partnership between the Commonwealth and state governments for significant, principally softwood, plantation expansion (1967-1980);
- ❑ partnership with the private sector through joint venture and leasing programs (1980 to present); and
- ❑ corporatisation and privatisation of management of State owned plantations (1990 to present).

### ***Initiation: 1880-1920***

When Europeans settled Australia, they found a large supply of hardwood timber in the native forests. Native softwoods, however, were relatively restricted geographically, to areas of slow growing *Callitris* in northern NSW and southern Queensland and to areas of *Araucaria cunninghamii* in Queensland and northern NSW. In the 1880s, experimental plantings began in several states. Initial experimental plantings by government agencies in the different States led gradually to selection of appropriate species (primarily *Pinus radiata* in the south with some *Pinus pinaster*, and primarily *Araucaria cunninghamii* and *Pinus elliotti* and *Pinus caribea* in the north) and development of silvicultural techniques that suited Australian conditions (Carron 1985).

The goal of achieving some degree of self-sufficiency in softwood timber supply, and consequent assumed economic benefits, were the primary drivers for development of plantations in Australia until the 1970s. The majority of early plantings were established on land that was converted directly from native forest, principally on sites where native forests were then – at least – less commercially productive. Obtaining land for plantation establishment was a significant early difficulty for many State agencies, with State lands and agricultural departments often wanting land that had been cleared of forest turned over for agricultural use rather than established to plantation (Rodger 1952).

### ***Consolidation: 1920-1967***

The early establishment of plantations, up to the 1960s, was on a relatively small scale. Planting programmes were started, then interrupted by World War I and World War II. After World War II, planting programmes increased significantly, with different States undertaking different levels of planting.

There were also secondary motives to the import substitution, such as employment creation and the creation of a resource to support regional economic development. The Queensland Forest Service, for example, sought to develop plantation resources sufficient to support local-scale industries at geographically dispersed locations along the Queensland coast (Carron 1985). There were also, in most states at some stage, various small-scale employment schemes based on plantation establishment. In Tasmania, for example, major plantings were undertaken at Fingal and Strahan from the early 1960s to alleviate local unemployment (Inglis *et al.* 1985). Prison labour was also used to establish some plantations, for example in NSW where prison labour camps were established in several locations (Grant 1989).

### ***Expansion: 1967-1980***

In 1964, the Australian Forestry Council was formed as a standing advisory body comprising the Commonwealth Ministers for National Development and for Territories and each of the Ministers responsible for forestry in the six Australian States. At its first formal meeting in August 1964, the Council set as one of its priorities the establishment of a softwood resource large enough to achieve national self-sufficiency; it was estimated that 75,000 acres (30 000 hectares) should be planted per year to achieve this target, representing a significant increase over previous planting rates (Rule 1967).

To facilitate achievement of this expanded planting rate, two “Softwood Forestry Agreements Acts” were passed, the first in 1967 and the second in 1972 (Standing Committee on Environment and Conservation 1975). Under these Acts, the Commonwealth Government loaned money to the State Governments for the establishment of plantations. The money was lent for 35 years at the long-term bond interest rate, with no repayments or interest due for ten years. During the period the Softwood Forestry Agreements Act were in place, establishment rates increased significantly (Wood *et al.* 2001). Concurrently, associated processing infrastructure was developed near some of the larger planting zones. In South Australia, both privately and publicly owned processing facilities were developed. In other States, processing facilities were generally privately owned, and often established with agreements with State governments that guaranteed the processors a supply of timber from State plantation areas.

The rapid expansion of plantations, predominantly by the public sector, coincided with the rise of the modern form of the environmental movement. The clearing of native forests for establishment of plantations was criticised vocally. *The Fight for the Forests*, a seminal critique of the environmental impacts of both large scale clearfelling and of conversion of native forests to plantations, was published in 1975 (Routley and Routley 1975), following some precursor critiques. At the same time, the quest for self sufficiency was being questioned, and at the 1974 national FORWOOD Conference ‘was discarded ... as not being a rational basis for softwood planting’ (Standing Committee on Environment and Conservation 1975). In 1975, the Standing Committee on Environment and Conservation reviewed the operation of the Softwood Forestry Agreements Act 1967 and 1972, and concluded that in most cases ‘Money should not be loaned to the States for the planting of softwoods in areas where native forest is to be clearfelled ... The Committee strongly advocates the increasing use of marginal agricultural land for future plantations.’ (Standing Committee on Environment and Conservation 1975: 8,50).

Although the self-sufficiency argument was no longer a force, the expansion of Australia’s plantation estate remained a public policy priority. In the late 1980s, two proposals were made for a large increase in the plantation estate. The Forestry and Forest Products Industry Council (FAFPIC 1987) called for an increase in plantations to supplement wood supplies from native forests and to provide a suitable base for a strong wood processing sector in Australia. This proposal saw plantations as the source of types of timber which native forests could not supply. The Australian Conservation Foundation also called for an expansion of the plantation estate, but saw plantations as a substitute for timber from native forests, and therefore as a way of reducing logging pressure on native forests (ACF 1988).

As a result of public opposition, conversion of native forests to plantations was phased out in most states from the 1980s; it now occurs only in Tasmania. State agencies (and other plantation growers) therefore needed to find suitable cleared, usually ex-agricultural, land to expand their estates. As a result of European settlement and land tenure patterns, almost all cleared land was in private ownership.

The purchase of privately-owned cleared agricultural land by State agencies for plantation establishment had previously been met with resistance from some farmers and rural communities, who objected to agricultural land being converted to non-traditional agricultural uses and to public ownership (Rodger 1952, SPIS 1990). In addition, the cost of purchasing agricultural land substantially increased the costs of establishing new plantations, and State agencies could no longer afford a rapid expansion of the plantation estate if it had to involve purchasing land. New ways of achieving the desired expansion of the plantation estate were needed, as discussed below.

In the 1980s, there was also a shift to the establishment of hardwood plantations, principally for pulpwood. This was motivated by a range of factors, including environmental concerns over sourcing hardwood woodchips from native forests, and increasing international demands for eucalypt wood pulp. By the 1980s, short rotation eucalypt plantations, usually of *Eucalyptus globulus* or, particularly in Tasmania, *E. nitens*, were being established by some state forest agencies and private companies.

### **Mixing the public and private sector: joint venture/leasing 1980-2002**

A shift towards private-public mixes of establishing plantations began in the late 1980s. This shift towards various forms of partnership arrangements has accompanied policy goals of returning trees to agricultural landscapes to both address unsustainable land use practices and diversify farm incomes (Shea and Bartle 1988, Williams *et al* 2001). Joint venture and leasing programs have been the two common forms of partnership arrangement used.

Joint venture programs usually involve private landholders providing land, while either the public agency or a private investor which has contracted the public agency as a manager for the joint venture provides funds for plantation establishment. The public agency establishes and manages the plantation, and returns from harvest are shared between the joint venture partners at time of harvest.

Annuity, or leasing, schemes usually involve paying a private landholder an annual fee for the use of their land for growing a plantation. The costs of growing the plantation are met by the public agency or the private investor that uses the public agency as the plantation manager. Under these, it is usual for 100%, or close to 100% of returns at final harvest, to go to the party that has met the costs of growing the plantation.

While most joint venture and leasing programs have been for establishment of short-rotation eucalypt plantations or for *Pinus radiata* plantations, a range of other joint venture programs have also been developed. For example, the Western Australian Forest Products Commission has joint venture programs for other species such as *Pinus Pinaster*, and aims to establish plantations in lower rainfall areas and to diversify the range of plantations being established (FPC 2001).

The increase in plantations established by a mix of public and private ownership since the 1980s is evident in Figure 0.4. The involvement of the public sector in joint venture and leasing programs is understated in Figure 0.4, as under some joint venture and lease programs the State agency is the primary manager of the plantations, but does not own either the land or the trees<sup>10</sup>.

### **Corporatisation and privatisation: 1990-2002<sup>11</sup>**

#### CORPORATISATION

There have been significant changes to the operational structure of all the state forest agencies since the early 1990s. While many of the changes date from the 1980s and sometimes earlier, they have become most apparent from the 1990s onwards. All the state forest agencies originally operated as government departments which had a range of goals, many of them non-commercial. The agencies established plantations to meet a range of political goals, particularly the goal of self-sufficiency in timber, and the commercial profitability of the plantation operations were not necessarily an important consideration. From the 1980s, this changed significantly. Commercial objectives became important, and the state forest agencies were restructured to operate as commercial entities rather than as government departments. All of the state forest agencies now operate as Government Trading Enterprises (GTE) or as business units within government departments. In most cases, the shift to official status as a GTE followed several years of making a transition to using appropriate financial structures and accounting procedures suitable for a GTE. Table 0.2 summarises the corporatisation process in the state forest agencies.

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<sup>10</sup> For example, a comparison of the NPI figures for plantations establishment in WA in 2000 (Wood *et al.* 2001) and figures from the Forest Products Commission (FPC 2001) shows there is a higher degree of public involvement in plantation establishment than is indicated by the NPI figures. NPI figures state that in 2000, 61122 hectares of softwood and hardwood plantations were established in which both trees and land were privately owned, and 3,649 hectares were established in which the land was privately owned and the trees were jointly owned by the private and the public sector. Much of the 3,649 hectares was softwood planted for the Maritime Pine Project. The FPC (2001) reported that in 2000, 6125 hectares of hardwood plantations were established which were managed by FPC but privately owned. In other words, based on the 2000 planting statistics alone, the FPC is actively involved in managing several thousand hectares of plantations which are entirely privately owned.

<sup>11</sup> Information for this section has been drawn from the annual reports of relevant agencies/ companies and from personal communication with representatives of ACT Forests, Forest Products Commission, ForestrySA, Forestry Tasmania, State Forests of New South Wales, and Hancock Victorian Plantations.

**Table 0.2. The corporatisation process in different Australian States and Territories**

State	Date & details of corporatisation
Victoria	The Victorian Plantations Corporation (VPC) was formed in 1993. Previously it had been managed as a part of the Department of Conservation and Natural Resources which had a range of functions, including National Park management and native forest management. The formation of the VPC allowed the plantations business to be treated as a single entity with a primarily commercial function (the VPC was subsequently privatised, as is described below.)
New South Wales	In 1992, the NSW Forestry Commission, the Government Department responsible for managing publicly owned native forests available for timber production and publicly owned plantations, became a Government Trading Enterprise under the name State Forests of New South Wales (SFNSW). As part of this change, the commercial and regulatory functions of the Forestry Commission were separated, with SFNSW undertaking the commercial functions. As a GTE, it measures its performance in terms of commercial efficiency, environmental care and social contribution for both the native forest and plantation estate. SFNSW is structured into two operating Divisions: Planted Forests and Native Forests. The Planted Forests division has a clear commercial focus.
Tasmania	The Forestry Commission, which was responsible for managing both publicly owned commercial native forests and plantations, was commercialised from 1985, and became Forestry Tasmania, a GTE, in July 1995.
South Australia	The Woods and Forests Department in South Australia managed both native forests and plantations in South Australia. Native forests have been managed only for conservation purposes, not production. In 1997, the department was commercialised as ForestrySA and operated as a government business unit; in January 2001, the South Australian Forestry Corporation began operation and trading under the name of ForestrySA, a public corporation.
Western Australia	There have been several phases of management structures for both native forests and plantations in WA. Initially, the Forests Department was responsible for managing publicly owned native forest and plantation; in 1984 the Forests Department became part of the Department of Conservation and Land Management (CALM) which was responsible for the management of conservation as well as commercial areas of native forest. In November 2000, the Forest Products Commission (FPC) was formed. The FPC is a GTE, and is responsible for managing publicly owned commercial native forests and plantations.
Queensland	The Queensland Department of Forestry shifted to development of a corporate management style from the late 1980s onwards. In 1989, the newly elected Queensland government placed administrative control of the Department within the Queensland Department of Primary Industries; it became a business group within DPI under the name Queensland Forest Service. In 1995 separation of commercial and non-commercial functions, and of custodial and regulatory roles occurred, with DPI Forestry taking on the commercial and custodial roles as a fully commercialised self-funded entity. DPI Forestry is responsible only for plantation forestry.
Australian Capital Territory	ACT Forests has had independent control of its finances since Territory self government in 1989; however, it had made operating losses every year since then. In February 2001, the ACT Government implemented a range of measures including reform of governance to ensure that ACT Forests operations would become commercially profitable and not inhibit the maintenance of the private sector wood processing industries. ACT Forests was restructured, a Board of Advisors was established, and the Government provided full funding of community service obligations.

The shift towards corporatisation of state forest agencies was part of a nation-wide trend towards corporatisation and privatisation of Government owned business, motivated by a range of reasons including reducing government budget deficits and improving economic efficiency. Since 1995, moves to corporatisation have been driven largely by review of government businesses under the National Competition Policy (NCP), which under three intergovernmental agreements aims to remove any

unfair advantages government businesses may have had over competitors in the private sector. This has included measures such as the introduction of competitive neutrality between public and private business and the review and reform of many laws that restrict competition (NCC 2002). Part of the requirement of the Competition Principles Agreement signed by State government in regard to forestry and fisheries was to ensure that the regulatory and commercial functions of forestry were not vested in the same public entity (Trembath 2002). Ensuring competitive neutrality and making changes recommended by the NCP have driven corporatisation in both South Australia and Western Australia, along with a desire to ensure sound business management practices are in place for State-owned forestry assets.

The primary changes directly related to corporatisation of the different State forest agencies in relation to plantations have been:

- ❑ A clearly stated primary goal of focussing on the commercial business of managing the plantation;
- ❑ Adoption of accounting procedures that are similar to private sector corporate accounting with clear, transparent financial statements and audit requirements; and
- ❑ In some cases, regulatory and business functions have been separated, with a government department taking on the regulation and oversight role, while the new GTE becomes solely responsible for the business activities related to the State-owned plantations.

The effect of corporatisation on employment levels is difficult to estimate. In many of the agencies, there was downsizing associated with the shift to a more commercially oriented business. This resulted both from outsourcing of work previously done in-house to contractors, and possibly from the change in emphasis from focussing on a wide range of objectives to focussing on the commercial enterprise.

Corporatisation does not appear to have adversely affected the provision of various services not directly relating to the core business of growing, harvesting and selling plantations. For example, agencies that provided extension services prior to corporatisation have generally continued to do so since corporatisation. In some cases, for example that of ForestrySA, the corporatised agency is explicitly funded by the State Government to continue providing these services. Similarly, recreation activities in plantations do not appear to have been affected by corporatisation. For example, ForestrySA and ACT Forests have traditionally provided recreation facilities in some of their plantation forests because of their proximity to urban populations. In both cases, they still do so after corporatisation, but with explicit funding from their respective governments for providing those services. In other cases, such as that of Forestry Tasmania, significant recreational facilities (primarily in its native forest areas) may be funded without any compensatory payments from government. The current management of publicly owned plantations in different States is discussed further below.

#### PRIVATISATION

The only case of full privatisation of a State-owned plantation resource in Australia has been the sale of the Victorian Plantation Corporation (VPC) to Hancock Victorian Plantations Pty Ltd (HVP), a subsidiary of the US-based Hancock Timber Resource Group in 1998. This privatisation had a long genesis: the Labour Party then in power in Victoria took the first steps towards privatisation of Victoria's publicly owned plantation estate as early as the 1980s. The subsequent Victorian government led by Liberal (conservative) Premier Jeff Kennett pursued the largest privatisation program in Australia during its terms in office (1992 – 1999). It saw privatisation both as helping to reduce its budget deficit and as embracing the concept of improving efficiency through privatisation. The VPC was sold during this period (Walker and Walker 2000), although the State Forest land base was formally transferred on a 99 year lease rather than as freehold.

The VPC privatisation was achieved in four stages:

- ❑ The establishment of the VPC in 1993, under which the plantation business was treated as a sole entity and on a commercial basis rather than as a government department that had multi-facets and competing budgetary obligations;
- ❑ The commercialisation of long standing wood supply agreements, most of which were enshrined in Acts of Parliament;

- ❑ Surveying of plantation lands vested in the VPC by accurate delineation; and
- ❑ International offer for sale which was managed by the Victorian Treasury and international consultants.

The VPC was privatised in a trade sale – in other words, through a direct sale of the business in state ownership to another business – rather than as a share float as has been the case with some other privatisations in the country. Under the privatisation, the management rights were sold, but not the land. HVP has a long-term lease over the land that was vested in the VPC, along with ownership of the trees and the right to harvest and replant them in perpetuity. The trade option was chosen because it was anticipated that it would generate the greatest return to the vendor (the State).

Privatisation of VPC continued the changes begun when it was commercialised. Principal amongst these were:

- ❑ a sharper focus on plantation management as a business enterprise, rather than on a wider range of responsibilities, and on operating as a dedicated, commercial plantation company;
- ❑ an associated reduction of the total workforce employed by the organization, both as a consequence of downsizing and of outsourcing of activities;
- ❑ stronger linkages to international markets as the result of purchase by an international investor;
- ❑ a more explicit policy of corporate accountability to key stakeholders, and the development of processes for dialogue with those stakeholders.

Other aspects of management under HVP ownership are outlined in the sections below.

## **1.4 Current utilisation and management of State owned plantations**

In all States, the dominant use of State owned plantations is for commercial wood production. Interactions with the private sector in establishment, management and harvesting of plantations for wood production have changed for some agencies in recent years. There are some secondary uses of State owned plantations, including recreation, grazing, and firewood collection, as well as considerable interest in the potential for markets for the sequestration of carbon and the environment services provided by plantations. The secondary uses are discussed below, including reference to how management of these uses changed, if at all, with privatisation in Victoria.

### **MANAGEMENT OF STATE-OWNED PLANTATIONS: INTERACTIONS WITH PRIVATE SECTOR**

The private sector is involved in the State-owned plantation sector through:

- ❑ being contracted to establish, manage and harvest plantations; and
- ❑ purchasing and/ or processing timber produced from State-owned plantations.

Consequently, much of the interaction between state and private sectors has been mediated by the price of plantation wood.

#### ***Plantation establishment, management and harvesting***

A large proportion of plantation establishment and management activities – including ground preparation, tree planting, and weed control – was in most States originally carried out by workers employed by state forest agencies. This has changed over recent decades, with work increasingly being contracted out to private operators, generally through a tender process. While fire protection activities tend to remain an in-house activity for most agencies, plantation establishment is now predominantly contracted out to the private sector. For example, Forestry Tasmania has shifted from conducting 70% of its direct operations using its own resources prior to corporatisation, to contracting out around 70% of its direct operations to the private sector. For some agencies, such as Forestry SA, contracting these activities to the private sector was standard practice prior to corporatisation; Forestry SA currently contracts out about 50-70% of planting, site preparation, weed control and

silvicultural operations. VPC also shifted to outsourcing much of the establishment and management operations to contractors, and HVP has continued this practice since privatisation.

The plantation agencies generally use their own staff to plan, manage and audit plantation operations. Harvesting work has traditionally been carried out by the private sector, with either the state forest agency or the processing plant engaging private harvesting contractors to fell trees and deliver them to processing plants. This has not changed with corporatisation. However, in some states (eg NSW), the forest agency is progressively resuming direct responsibility for harvesting and log merchandising operations to maximise value recovery from plantation forests, and to gain greater control over operations with major environmental and safety dimensions.

### ***Plantation wood processing and pricing***

The plantation processing sector in Australia has always been predominantly privately owned, with the exception of South Australia where, until their sale to Carter Holt Harvey, the state Woods and Forests Department had its own plantation softwood processing facilities. Historically, the principal objective of state forest plantation growers has been to supply private sector processors with wood suitable for value-adding – as veneer and sawlogs for solid wood products, pulp or chip logs for paper and reconstituted products, and poles and posts for preservative treatment. State governments and the Commonwealth have sought to encourage these value-adding enterprises through, particularly, industry and trade policies and regional development and taxation regimes. More recently, with the establishment of short-rotation eucalypt plantations and some regional surpluses of pulp or chip wood, woodchip and round log export businesses have also developed.

State plantation growers have commonly sold timber to private processors under long-term supply agreements, which were often enshrined in State legislation. There have been concerns that these agreements, particularly up until the 1980s, involved the setting of administratively determined prices for timber which did not necessarily take into account the actual costs involved in growing the timber (Byron and Douglas 1981, Hurley 1986, Cochrane and Gerritsen 1990).

Commercialisation and corporatisation of State-owned plantation operations has been accompanied by some changes in methods of determining prices for timber, with cost-based procedures increasingly implemented. The National Competition Policy encourages forest agencies to 'ensure that the goods and services they supply are priced to cover their full costs of production, including ... costs ... to which private businesses are normally subject' (Trembath 2002). However, attempting to achieve this is challenging, for a range of reasons. There are relatively few growers and processors in the industry, particularly in any one geographical region, and so a process of competitive auction of timber may not achieve a price reflecting true market value. There have been recommendations that log residual values be used to set prices, but this basis has also been criticised, with concern that this may lead to prices being determined by the 'ability to pay' of the processing industry rather than by the cost of growing the wood (Trembath 2002). Clearly, there are difficulties in determining an appropriate, competitively neutral pricing system which also acknowledges the increasingly international basis of log pricing.

Most prices are still determined on a negotiation basis, but now are calculated using formulas that aim to reflect costs and include a relevant profit margin for the grower. Table 0.3 summarises the methods used to set prices for timber in different States.

In Victoria, privatisation involved development of a more open pricing process, in which timber prices are set using a formula which is mostly based on third party transparent information. The formula is reviewed periodically, and because it is based on third party information – *ie* on information about prices faced by growers selling timber by competitive means – it reflects cyclic changes in pricing, whereas previous pricing systems did not.

Price setting systems, therefore, have changed considerably with the shift to commercialisation, corporatisation and privatisation. Prices are now set with more referral to a likely market price. However, prices are usually not publicly available – creating difficulties for small-scale growers when they attempt to negotiate prices with processors in a market dominated by large growers with long-

term agreements for wood supply, and restricting the information base available to potential investors in private plantation forestry (Bhati 2002).

**Table 0.3. Timber pricing methods in different States/Territories**

State/Territory	Timber pricing mechanisms
	<i>Note: these methods are used for both native forest and plantations</i>
New South Wales	Most timber sold under long term agreements and priced using a residual value method  *Increasing used of competitive tendering as new parcels of wood come on stream
Queensland	Most forest products sold via competitive processes
Western Australia	*Timber sold through negotiated agreements, with prices calculated based on the cost of growing plus a profit margin
South Australia	Log prices are market based.  *A significant proportion of wood is committed under long term agreements; the remainder is sold through open competitive expression of interest/tendering for period generally of 5-10 years.
Tasmania	Prices for major products determined by negotiation with reference to market prices.  *A mix of negotiated wood supply contracts with processors and competitive tender is used
ACT	Logs sold at market prices

Source: Trembath (2002) except where indicated

\* indicates that the following details were obtained through personal communications with representatives of the different State agencies

## USER RIGHTS IN STATE-OWNED PLANTATIONS

There are some user rights allocated over some State-owned plantation areas in Australia. The predominant non-timber use of plantations is for recreation, and there is some grazing and firewood collection in plantations. With the exception of particular forests, these uses are generally on a relatively small scale.

### **Recreation**

The overall volume of recreational use of plantation areas is relatively small in most States except South Australia and the ACT. In SA the relatively small area of native forests, and in the ACT the proximity of plantations to urban areas, have led to heavy recreational usage and the development of recreational facilities including walking trails and amenities in plantation areas. In other States, plantation areas are used for some specific recreational activities, often those that are not permitted in many native forest areas, such as the staging of car rallies.

In general, public plantation areas are open to public access, although State forestry agencies have the right to restrict access in certain circumstances. Access is likely to be restricted when harvesting operations are being carried out, and when there is high fire danger. The increasing shift to establishment of plantations by public agencies on private land, however, does have some implications for access to the forest by the public. In general, plantations established by public agencies on private land are not open for public recreation; neither are most privately owned plantations, with the exception of HVP. These types of plantations constitute a large proportion of the new plantations being established, suggesting that the area of plantations available for recreation is not likely to increase in the future.

When the VPC was privatised, key recreational facilities that had been constructed for public use were retained by the government. While HVP has an open gate policy for passive entry into plantations in most cases, it erects gates to prevent access where there has been damage caused by public access, for example by trail bikes or four-wheel drive vehicles. HVP has provided some recreational facilities, such as walking trails, but generally maintains passive access only, without active encouragement of recreation – a policy similar to that of most State-owned plantations. While car rallies were allowed in plantations areas under VPC management, HVP has ceased allowing access for rallies for safety and insurance reasons.

### **Grazing**

Grazing on a fee basis is allowed at some stages of plantation growth in some publicly owned plantations; although it is generally a minor part of plantation business, grazing rights are often keenly sought and retained by neighbours or other graziers. Grazing in plantation areas is likely to occur on a much larger scale in joint venture and lease plantations, where it would be undertaken by the private landholder whose land is contracted to the plantation grower.

### **Firewood**

Firewood collection, similarly, is allowed by some state forest agencies. In the ACT and SA, firewood collectors are allowed to gather firewood in plantation areas after purchasing a permit, and are only allowed to take wood lying on the ground. In WA, firewood collectors may collect wood residues from the forest floor after thinning or clearfell. HVP does not allow commercial firewood operations to operate in its plantations. Softwood species are not preferred for firewood in Australia, and early attempts to establish eucalypt plantations for firewood were not promising, although there is now renewed interest in such plantations.

## **MARKETS FOR ENVIRONMENTAL SERVICES**

There has been considerable discussion of the potential for creating markets for the various environmental services provided by plantations, including markets for carbon, salinity and biodiversity credits (for recent discussion of their perceived potential, see Murtough *et al* 2002 and van Bueren 2001). While these markets have yet to eventuate on any scale, there is strong public policy interest in their potential to support plantation and plantation-based development (eg SFNSW 2002, Williams *et al* 2001), including in lower rainfall zones where salinity mitigation and biodiversity services from planted trees are usually most critical, and where returns from conventional markets alone are not commercially competitive.

In terms of carbon, there have been some agreements in which carbon rights have been registered over areas of plantations. For example, SFNSW has an agreement with Tokyo Electric Power Company (TEPCO) for the establishment of plantations – up to 40,000 hectares over 10 years – for which TEPCO will own both the trees and the carbon rights (SFNSW 2002). Similarly, Western Australia's FPC has an agreement with British Petroleum in which plantations are established to offset carbon emissions (FPC 2001). While many in the forests sector believe there is considerable potential for future markets to develop in which carbon rights for plantations are traded, this has yet to eventuate – despite some pioneering attempts by the Sydney Futures Exchange (SFNSW 1999).

Several states are preparing for the emergence of environmental services markets by enacting relevant legislation: for example, in May 2001, the Victorian government enacted carbon property rights legislation, which also supports investment in environmental plantings for purposes such as habitat expansion, mitigating salinity and land protection (NRE 2002). Some government agencies have also sought to develop investment structures which would capture these environmental services markets in support of tree growing, particularly in lower rainfall zones (eg Salvin 2001).

## **1.5 Private plantations**

This section refers to plantations that are predominantly privately owned, other than plantations owned jointly between the public and private sector, which were discussed in the previous section. There have been three primary forms of privately owned plantation development in Australia:

- Plantations established by wood product companies;
- Plantations established through investment companies; and
- Plantations established by individuals or farm managers using grants, loans or their own finances.

### **PLANTATIONS ESTABLISHED BY WOOD PRODUCT COMPANIES**

Some plantations have been established by subsidiaries of companies involved in wood processing, such as Gunns Plantations Ltd<sup>12</sup>. These plantations have usually been established as a way of developing a resource owned by the company which allows the company to control and hence achieve certainty of supply of a part of their wood supply for future processing (McKenzie Smith 1975). These companies have had some assistance from the State for establishing plantations. For example, some companies were given cheap leases on public land to assist them in establishing plantations.

In recent years, there has been a shift by some companies to divest themselves of their plantation estates, and concentrate on the core business of processing. The most recent example of this was the 2001 sale by Paperlinx of their plantation estate to HVP for \$152 million (Paperlinx 2001). On the other hand, Gunns in Tasmania, a timber processor, has increased its plantation estate through its purchase of major forest companies, including North Forest Products for \$335 million in March 2001 (Anon. 2001), and has also diversified into providing investment prospectus opportunities for the establishment of new plantations (Gunns 2002).

Historically, establishment of plantations by industrial companies has attracted relatively little criticism or controversy compared to that associated with private plantations established by investment companies (McKenzie Smith 1975). This may have been because the latter were seen, during the 1970s, as a less reputable form of investment, for reasons discussed below. More recently, public opinion does not appear to have differentiated between the two forms of ownership, which have – in any case – become less distinguishable.

From the 1980s onwards, some industrial companies began establishing joint venture and leasing schemes, similar to those used by the public sector described above, under which they established plantations on agricultural land with private landholders. The proportion of this type of plantations established using joint ventures between private landholders and industrial forest companies is unknown, but it is significant in some regions.

### **PLANTATION ESTABLISHED BY INVESTMENT COMPANIES**

Plantation investment companies have operated in Australia since the 1920s, with distinct phases of development. In the 1920s and 1930s, several bond companies began to operate, selling 'bonds' in plantations to investors and promising to establish and manage plantations and provide a return at final harvest. The plantations being established were predominantly softwood plantations. The majority of these schemes failed in the 1930s and 1940s, with the primary survivor being SAPFOR (South Australian Perpetual Forests). It was perhaps at this time that investment schemes in plantations began to achieve a notorious reputation, as investors in some schemes discovered their money had not been invested in plantations, or had been invested in plantations that did not grow or achieve returns as predicted at the time of investment (McKenzie-Smith 1975).

There was very little investment activity in plantations again until the 1960s, when both bond companies, and new forms of investment prospectus investment companies, began to operate, again generally establishing softwood plantations using investor money that was obtained through a bond or prospectus structure. A similar experience occurred, with several companies going bankrupt, not

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<sup>12</sup> Formerly North Forest Products (NFP), and before that Australian Pulp and Paper Manufacturers (APPM)

investing the money as stated, and other negative experiences occurring for many investors (McKenzie-Smith 1975).

The contemporary form of investment prospectus companies began to be established in the late 1980s and the 1990s. They operated according to much stricter rules regarding investment structures than earlier companies – current companies generally operate through release of an investment prospectus, for which they obtain a Product Ruling from the Australian Tax Office to verify that the investment structures being used are appropriate. The investment companies currently active in Australian plantation forestry have been established in response to a variety of events, including the technical capacity to grow short-rotation hardwood eucalypt crops for woodchip export; strong State and Commonwealth support for the expansion of plantations on privately owned land; and the presence of tax deductibility provisions that provide an incentive for investors to put their money into an investment that has a relatively long time before return (Schirmer 2002a).

The investment companies have been responsible for a significant part of the increasing rates of plantation establishment in the past decade. However, their investments have predominantly established short-rotation eucalypt plantations, as a consequence of the types of incentives available for plantation establishment in Australia. The primary incentive has been the tax deductibility of the costs incurred in establishing and managing plantations. This incentive has attracted considerable investment from city-based investors; it provides little incentive for the establishment of plantations by farmers on lower incomes who will not receive a significant tax benefit by doing so.

The role of the Commonwealth in triggering investment in plantations can be seen by examining recent changes in planting resulting from changes in taxation rules in Australia. Before 2000, tax deductions operated under what was commonly referred to as the '13 month' rule, described below. As a result of a national review (the Ralph Review) of taxation in Australia, this rule was changed:

“The so-called '13-month' rule ... meant that the investment management company could raise funds from investors in one financial year, and then take 13 months to provide the services that had been paid for. For timber plantation projects, it was a useful provision because it enabled the investment manager to raise the funds and then apply them to getting the plantation 'in the ground' in a timely way that could be matched to the seasonal requirements of plantation establishment.

The Government removed the 13-month rule in cases where the prepaid expenditure was greater than the investor's income from the same activity for that tax year. This policy change became law on 30 June 2000. Withdrawal of the rule meant that investor funds had to be spent on services provided in the same tax year as they were paid to the investment manager.” (Australian Forest Growers 2000: 10).

An immediate consequence of the withdrawal of the 13 month rule was a large increase in the area planted in the year 2000, as plantation companies with irreversible commitments were forced to bring forward their planting to comply with the new policy (Australian Forest Growers 2000).

After the large increase in planting in 2000, investor uncertainty led to a downturn in establishment rates in 2001. In 2001, the ATO disallowed a large number of tax deductions for mass-marketed agribusiness investment schemes. This led to a sharp downturn in investment in all these types of schemes, including plantation investment. In July 2001, receivers were appointed to Australian Plantation Timber (APT), one of the major listed prospectus-based investment companies, after its directors placed it in voluntary administration; its collapse was attributed by some to the removal of the 13-month rule (Peacock 2001a, Beyer 2002). Share prices in other listed companies fell sharply when the news was announced (Peacock 2001a).

In October 2001, the Government announced that it would pass legislation for a new '12 month prepayment rule' that would allow investors 'to receive tax deductions for investments in projects up to June 30 each fiscal year before the plantations are actually established in the ensuing 12 months' (Peacock 2001b). This announcement appeared to improve investor confidence; share prices in GSP and Timbercorp recovered rapidly (Peacock 2001b). In March 2002, the *Taxation Laws Amendment Bill (No 1) 2002*, which included the legislation required to implement the 12-month repayment rule, passed both houses of Federal Parliament (Acuiti Legal 2002). Despite the introduction of the 12-month prepayment rule, the confidence of investors in the plantation industry is still responsive to adverse announcements related to agribusiness investment issues.

It is clear that, in the Australian case, taxation policy significantly influences the extent and form of prospectus-based plantation establishment, primarily through its choice of the taxation treatment of plantation investment. An issue of current debate is the extent to which government should intervene further in the investment market, for example by structuring tax regimes to favour investment in longer-rotation plantations or those established on less productive sites.

## **PLANTATIONS ESTABLISHED BY INDIVIDUALS AND FARM MANAGERS**

The third form of plantation establishment on private land has been farm forestry – the establishment of a commercial tree crop on a portion of a farmer's property. Since the 1970s, and occasionally earlier, various policies, schemes and programs have been put in place to try to encourage farm forestry throughout Australia. Some of these have been operated through the state forest agencies; for example, extension services have been provided to farmers interested in taking up farm forestry, and joint venture and leasing programs have been available to farmers through state forest agencies<sup>13</sup>.

The principal means used to encourage farm forestry have been grants and low interest loans, funding of research and development, extension services, and development of joint venture and leasing programs.

Grants and loans from State Governments and State agencies to encourage private planting have been offered in the past, but are generally not offered currently. One example of this was the Farm Forestry Agreement Scheme offered by the Victorian Government from 1967, which offered low-interest loans with repayments deferred for the first 13 years for establishment of softwood plantings. The scheme had fairly low uptake – after 15 years, approximately 8,300 hectares had been established, and the scheme had high administration costs. There were also difficulties with repayments when some scheme participants were unable to sell thinnings from their plantations (Hurley 1986).

Funding of research and development of appropriate silvicultural regimes for growing plantations on agricultural land has occurred under government programs including the National Afforestation Program (1988-1990) and the Farm Forestry Program (1995 to present). Extension services have been developed along with research and development. In 1996 the Federal Government decided to fund the establishment of Regional Plantation Committees (RPC) through the national Farm Forestry Program, which would work to create a culture in which trees were planted for commercial purposes on private land. Seventeen RPCs have been established throughout Australia, and have been funded primarily by the Commonwealth Government, with some collaborative funding from the State governments occurring from 2000 (Tuckey 2000, NRRPC 2001).

There is also a strong commitment by State and Commonwealth governments to fostering an environment conducive to farm forestry development, with the *2020 Vision for Plantation Forestry* committing to removing impediments to the adoption of farm forestry and putting in place a regulatory and policy environment encouraging uptake. Progress towards this goal was reviewed by Stanton (2000), and supporting initiatives have included policy and market research (eg Buffier 2002, Race 2002) and provision of better market information (eg Bhati 2002).

Despite the significant efforts to create an environment conducive to small-scale farm forestry development, the expansion of farm forestry has been slow. Figure 3 showed rates of farm forestry establishment over time. While there has been a sharp increase in the area of farm forests established over the past decade, they still formed a relatively small portion of total plantation establishment. The reasons for this appear not changed greatly since Byron and Boutland's (1987) review of strategies to promote private timber production, which found that a combination of physical (farm size), business

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<sup>13</sup> The definition of farm forestry varies. Sometimes it is defined as including joint venture and leasing schemes; other definitions exclude joint venture and leasing schemes as, under most joint venture and lease schemes, the landholder has minimal active involvement in the plantation with plantation companies undertaking most establishment and management activities. In this section, joint ventures and lease schemes are referred to as they take place on land still owned and, in many cases, occupied by farmers; however it should be recognised that there is generally little active involvement of the landholder compared to other forms of farm forestry.

(priorities, market uncertainties, relative investment returns, access to capital), and human (management expertise, labour availability) factors limited commercial tree growing. It is notable that the most successful vehicles for encouraging uptake of farm forestry have been the joint venture and leasing schemes discussed earlier, which have addressed a number of the constraints identified by Byron and Boutland (1987). Leasing schemes, in particular, have resulted in significant uptake as they provide an annual income for the landholder during the life of the plantation.

## 1.6 Evolving demands and roles

Some of the demands and roles of Australia's plantation forests have changed little over the past century – principally those related to industrial wood production, and the associated economic development benefits. However, there are now greater expectations of the net environmental benefits plantation forest should generate, and community attitudes to plantations have varied considerably, from enthusiastic support to strong concerns.

### **ECONOMIC DEVELOPMENT: COMMERCIAL AND SOCIAL GOALS**

The initial motivations for many of Australia's forest plantations were both commercial and social. These dual motives, under which governments and plantation proponents sought to generate regional economic development and employment through the establishment of both plantation forests and plantation-based industries, are captured evocatively by the objectives of the Tasmanian Forestry Association, which had amongst its objectives in the 1920s (Carron 1985):

*“to promote ... the planting of the great waste areas of Tasmania with suitable exotic conifers ... by the establishment of forest plantations, homes or colleges in which destitute and waif boys of the Empire may find their place, their manhood and their citizenship in planting the waste and leaving a heritage of enormous value to those who came after”<sup>14</sup>.*

These aspirations continue nearly a century later. For example, the Plantations for Australia: the 2020 Vision strategy (1997), developed jointly by the Australian Commonwealth and State governments and the forest industries, promotes the economic and employment generation outcomes of significant expansion of Australia's plantation forests. Stayner's (1999) analysis of value-adding opportunities in regional Australia noted both the success of some plantation regions in attracting significant value-adding industries, and the need for there to be significant investment in value-added processing for employment and economic development goals to be realised.

While the perceived role of plantation forests in the Australian economy has evolved considerably over the past century – from one of import substitution to one of preferred commodity resource and source of export income – their importance in some regional and State economies remains strong. For these industrial commodity plantations, the commercial imperatives of cost minimisation and value recovery are dominant and recognised as central to the industry's future. Concurrently, in an era in which there are significant challenges to Australia's rural and regional economies and environments, there has also been a revival in public policy of an emphasis on the potential of plantations as a vehicle for broader regional economic development, and as a means of ameliorating environmental degradation in agricultural landscapes. In the past decade of significant market-driven plantation expansion, enthusiasm for the social benefits of an expanded plantation resource have been tempered, in particular regions, by concerns about the rural economic and social changes with which plantation forests are associated and, to varying degrees, held responsible.

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<sup>14</sup> As Carron (1985) noted, the subsequent national forestry conference (1922) “applauded the Tasmanian scheme as 'bringing into a forestry partnership of practical usefulness the waste lands of Tasmania and the waste childhood of the Empire'.”

## **OTHER SOCIAL ISSUES**

Attitudes to plantations in Australia have varied from the great enthusiasm of the colonial Acclimatisation Societies and the plantation-based industries to the strong objections, on the part of both some rural and urban Australians, to the form and scale of plantations. Support for plantation expansion to substitute for native forest harvesting was tempered by opposition to conversion of native forests to plantations, and by concerns about exotic monocultures (Routley and Routley 1975).

As plantations have expanded rapidly on farmlands over the past decade, farmer groups and rural communities have expressed clear preferences for the establishment of farm forestry-scale plantations rather than of large, 'industrial' (single species, large-scale) plantations. There have been strong concerns expressed about the impact of industrial plantations on rural communities, with concern that the establishment of industrial plantations accelerates processes of rural decline by reducing the number of farmers in the area and reducing demand for local services and hence reducing local employment and viability of small towns (see for example Kelly and Lymon 2000; Petheram *et al.* 2000, Tonts *et al.* 2001, Schirmer 2002a,b).

However, the commercial imperatives and tax arrangements driving recent plantation establishment have resulted in the majority of plantations established being of an industrial form and scale, as this is the most cost-effective option for both public and private growers. "Whole of farm" planting has also been facilitated by declining terms of trade for agricultural commodities and an ageing farmer population, both of which have encouraged some farmers to sell or lease their whole property rather than seek to integrate plantation forestry and agricultural production. Consequently, recent work (eg Buffier 2002, Williams *et al.* 2001) has sought to identify policy and investment options which might also support farm-scale forms of afforestation.

## **ENVIRONMENTAL BENEFITS AND COSTS**

In Australia, as well as elsewhere (Kanowski 1997), as plantations have expanded to become a more significant land use in some regions, so have expectations of the other environmental benefits they should deliver, and concerns about the adverse environmental impacts they might have.

In the Australian case, opposition to the level and form of native forest harvesting has been a large part of this public debate. Over the past 30 years, growing community opposition to continuing high levels of native forest harvesting has been matched by pressure from the environmental movement for the establishment of plantations to supply Australia's timber needs. Most Australian governments have been willing to facilitate this transition, up to a point – but only one State, Queensland, has decided to completely cease production from public native forests, making a commitment to phasing out wood production from native forests over a 25 year period. Similarly, opposition to the conversion of native forests to plantations has shifted the expansion of plantation forests entirely to previously cleared agricultural land, with the exception of Tasmania.

The environmental benefits delivered by plantations are not yet as broad as some environmental NGOs would like. Many believe plantations should contribute more to biodiversity conservation and restoration, have expressed a preference for multiple species plantations, and for the establishment of plantations of locally indigenous species and provenances (Schirmer 2002a). The forest industries remain generally sceptical of the financial feasibility of mixed plantations on a large scale, while acknowledging their potential on a farm-forestry scale and for particular high-value products (eg Snell and Vise 2000). Research to investigate the impacts of plantations on landscape-scale biodiversity, and to develop guidelines to facilitate the achievement of biodiversity goals in conjunction with commercial goals is underway; preliminary results suggest that plantations can be sited and managed to enhance biodiversity values, and that the additional costs of such management are not necessarily great (eg Catterall 2000, Lindenmayer 2000; Lindenmayer *et al.* 2002).

As well as having concerns about the broad social and economic impacts of plantation expansion on cleared agricultural land, a range of concerns about the environmental impacts of plantations have been expressed, both by environmental groups and by members of various rural communities. These concerns have been about issues including the impact of chemical use on plantations, the effects of plantations on soil and water quality and quantity, and clearance of small pockets of native vegetation

when plantations are established, amongst others. In Tasmania there has been considerable concern about the clearfelling of native forests for plantation establishment. These types of concerns appear to occur on a regular basis in different regions, indicating that, while there is significant regulation of the environmental impacts of plantations, this regulation has not necessarily resulted in public confidence in the effectiveness of regulation in ensuring plantation forestry is managed in an environmentally sustainable manner. This perhaps reflects the methods used to develop regulation, which generally have not involved broad consultation processes with communities. In recent years, there has been increasing consultation with a broader range of groups when undertaking activities such as reviewing Codes of Practice, which is necessary to help develop greater public confidence in forest practices systems.

There is also strong public policy and some commercial interest in the other environmental services of plantation forests – principally as carbon sinks, as discussed above, and for their potential role in addressing salinity (Williams *et al.* 2001). In the Australian case, the salinity mitigation benefits of plantations may be offset in some cases by their impacts on water yields (Nambiar and Brown 2001, Stirzaker *et al.* 2002). Competition for water is increasingly significant in Australian agriculture, creating a challenging policy and operational context both for plantation forest expansion and for the delivery of optimum environmental benefits from plantation forests. The extent to which environmental services markets will shape the future extent, form and role of plantation forests in Australia remains to be seen.

## **EVOLVING DEMANDS AND ROLES: IMPLICATIONS FOR PUBLIC AND PRIVATE SECTORS**

The evolving demands and roles described above are forcing a greater convergence between the behaviour of public and private sector actors in many aspects of plantation forestry. State plantation growers must now operate on a strong commercial basis, with less capacity to explicitly address social policy goals; conversely, community expectations of private industrial forest growers are expanding beyond those of minimal environmental and social impact to delivery of environmental services. For these reasons, public and private sector plantation growers have become less differentiated over time, other than in political terms, and the various public-private partnerships described earlier have emerged.

The roles of state governments related to plantation forestry have also become more strongly differentiated, with (variously in different states) different agencies responsible for environmental oversight and regulation, for private and State forestry, for plantation growing, and for resource and industry development. Similarly, private sector plantation actors have become more diverse: while there are fewer, more consolidated, industrial-scale forest growers and processors, there are more small-scale growers and enterprises such as forestry consultants. These changes have been particularly rapid over the past decade, and it is arguable that the policy frameworks which might best to balance public and private interests, nationally and in most states, are not yet fully developed.

## **1.7 Reconciling public policy objectives and private sector investment**

### **PUBLIC POLICY OBJECTIVES RELEVANT TO PLANTATION FORESTRY IN CONTEMPORARY AUSTRALIA**

The principal Australian public policy objectives relevant to plantation forestry over the past decade have been:

“smaller government”, reflecting the dominant rational economic paradigm, manifested principally in: the sale of some government assets to reduce levels of government outlay and debt; withdrawal, diminution or commercialisation of some services, such as those associated with on-farm extension; smaller and more commercially-oriented government agencies; policy and regulatory change to diminish “red tape” and create an enabling business environment;

more pervasive entrepreneurship, as the conjunction and goal of smaller government, with a greater role for and emphasis on the private sector in all arenas of activity;

ongoing transfer of production from native to plantation forests;

a renewed interest in fostering rural and regional development, based in part on diversification of traditional agricultural enterprises and the development of new industries;

a concurrent attempt to address rural environmental degradation by, in part, large-scale reforestation.

These interacting objectives have created both opportunities and challenges in public policy terms; the extent to which each has been pursued also varies between the Australian states, and continues to evolve. The principal forms by which Australian governments have sought to reconcile public sector policy objectives and private sector investment in plantation forestry are summarised below.

## **RECONCILING PUBLIC SECTOR POLICY OBJECTIVES AND PRIVATE SECTOR INVESTMENT IN PLANTATION FORESTRY**

### ***Smaller government and more pervasive entrepreneurship***

All Australian governments claim success in relation to these goals. They argue that the business performance of state forest agencies, and the business environment for private investment in plantation growing and processing, are better now than a decade ago. Most analysts and the plantation forestry industries agree, and the significant private sector investments to increase Australia's plantation estate and processing capacity over the past decade are a measure of that success. As discussed earlier, most of the recent plantation expansion has been financed by prospectus investors, for whom the national tax regime has made short-rotation forestry investment particularly attractive; this outcome illustrates the capacity of governments to influence the investment climate for forestry through the tax system. However, the regional market dominance of major growers, their contracted long-term wood supply agreements with major processors, and related pricing issues continue to trouble both economic purists and those – notably current or prospective small scale growers and processors - who see their interests disadvantaged by prevailing arrangements.

The public policy challenge, which Australian governments have yet to successfully address, is how to balance the potential benefits of a vibrant and diversified small-scale forestry sector with the commercial realities of globally-competitive industrial commodity wood production. So far, governments have responded primarily through fostering a business environment conducive to large-scale industries while supporting a range of national and state programs which provide specific forms of assistance – such as in market intelligence and development, on-farm extension, and partnership opportunities - for small-scale growers. State governments have also developed agencies - of varying form, function and capacity - for private forestry. However, as noted earlier, these initiatives have not yet achieved significant expansion in small-scale commercial plantation forestry at a national scale. The development of markets and industries for products sufficiently differentiated from those from industrial plantation forestry, and of environmental services markets, are widely seen as the best prospects for significant development in the small-scale forestry sector. Australian governments are playing active roles in both these policy arenas.

### ***Smaller government and plantation forestry regulation***

Diminution of regulatory impediments to plantation growing has been a major focus of public policy nationally and in all Australian states. While there has been good progress in a number of respects, the regulatory environment continues to vary markedly between states. Recent Australian experience with prospectus investment afforestation (eg Schirmer 2002a) suggests that state and local government land use planning and dispute resolution processes are not well adapted to addressing plantation afforestation which is significant on local and regional scales. The extent to which plantations should be treated as “just another agricultural crop”, as plantation proponents argue should be the case, remains a focus of contention, particularly in relation to impacts on both land use (and consequent social and economic) change and water yield. State and local Australian governments are currently grappling with these issues.

The development and implementation of “new generation” environmental regulation, has been variable across states; some appear to have achieved much more practical and effective systems than others. Some of this variation between states reflects lack of community consensus about acceptable forest practices. As a result of this lack of consensus, forest certification has been slow to emerge in Australia, but now appears to be imminent for some plantation growers under the FSC process (eg Smartwood 2002); a joint government-industry initiative has developed a national forestry standard (AFS 2002), and a complementary national FSC initiative has been initiated (Cadman 2002).

### ***Shifting production from native to plantation forests***

Australian governments have sought to manage the transition in commodity wood production from native to plantation forests through both national and state, and joint, policies and programs – principally the Regional Forest Agreement process (CoA 2000), the associated Wood and Paper Industry Strategy and its constituent Farm Forestry Program (CoA 2001), and the ‘Plantations 2020 Vision’, and related state initiatives. Both market forces and political considerations have driven this transition, and each has accelerated the other to varying degrees.

The national and most state governments have sought to maintain a significant level of wood production from public native forests, encourage wood production from private native forests and farm forests, and enhance value-added processing of native forest wood, while also transferring significant areas of public native forest to conservation tenures. In the few regions where there has been a significant uncommitted plantation resource, such as in south-west Western Australia and parts of Tasmania, this transition has been fortuitously smooth in terms of resource supply, although often not in continuity of employment. Elsewhere, the geographical disjunction between native and plantation forest resources, and the differing investment and employment patterns of the two industries, has meant that regional economies and communities strongly dependent on native forest production have not been able to derive much benefit from developments in the plantation forestry industries, notwithstanding governments’ industry assistance programs (eg CoA 2000). Consequently, the aggregate national and state outcomes in the transition from native to plantation forest resources and industries in fact comprise both “winning” and “losing” communities within most states.

### ***Renewed interest in fostering rural and regional development, and concurrent attempts to address rural environmental degradation***

Perceptions of a “crisis” in parts of rural and regional Australia, as a consequence each of declining terms of trade for traditional agricultural production, structural change in agriculture and Australian society, and environmental degradation, have driven significant debate and policy initiatives in the past decade (see, eg, CoA 1999, Gray and Lawrence 2001). As discussed earlier, the development of globally-competitive new industries, and the large-scale return of trees to the landscape, are widely seen as two key elements of the response to these challenges.

Both traditional and innovative forms of plantation forestry are therefore important in this context, in which Australian governments see themselves more as facilitators and business partners than as the primary agents or financiers of change. Governments have also recognised that there are both public and private benefit and costs dimensions to these endeavours, and have sought to develop a variety of business and investment vehicles which combine public and private sector contributions. The most advanced initiatives developed on the basis of this partnership approach are those in Western Australia, using both oil mallee eucalypts and drought-tolerant pines (Shea and Bartle 1998, Williams *et al.* 2001). The development of investment structures combining public and private sector capital, for both public-good (eg environmental services) and private-gain (eg from commercial forest products) outcomes, such as the Murray-Darling Basin Commission’s “Vegetation Bank” (MDBC 2002), represent another step towards giving effect to this policy intent.

Public policy for these fundamental challenges facing rural Australia is predicated in large part on the capacity of governments to leverage private sector capital and direct it, through appropriate policy and investment frameworks, to investments which deliver public environmental and social benefits as well as competitive financial returns to the investor. This is an ambitious and desirable goal, but recent

Australian experience with both prospective new industries and plantation forestry prospectus investments mediated through the tax system suggests it is difficult to achieve.

The development pathway of relevant new industries, such as Western Australia's oil mallees, suggests that high levels of both public investment and business and technological acumen are necessary to realise the widely-shared vision of commercial crops which diversify farm incomes and address environmental degradation (eg Williams *et al.* 2001). The need for sustained involvement of governments in such endeavours should not be surprising, given their involvement in earlier phases of what are now established plantation industries; as Binkley (2002) has noted, the commitment of government, with its longer time horizons and access to capital at concessional rates, may be essential to the success of this "proof of concept" stage. Recent Australian experience with prospectus investment -driven afforestation also suggests that the private investment capital is focused – not unreasonably - on a limited suite of financially competitive investments, and that it will be difficult to harness this capital outside of specifically targeted investment products such as that described above. The extent to which these investment products can deliver funds and outcomes in relation to the scale of challenges in rural Australia remains to be seen.

## **1.8 Lessons from Australia's experience**

The Australian experience suggests the following guidance for increasing and sustaining private sector participation whilst seeking to also sustain the public interest:

### **GOVERNMENTS' ROLES MAY HAVE CHANGED, BUT STILL NEED TO BE STRONG, SMART AND COORDINATED**

Australian governments' roles in plantation forestry have evolved significantly over the past century, and continue to do so. The roles of government are now best characterised as, variously, public business enterprise, business and investment facilitator and partner, and environmental and industry regulator. Australian experience suggests that if governments withdraw too far from these roles, or do not perform them well or in a coordinated way, market forces will not necessarily direct investment to locations or forms of plantation forestry which are in the public as well as in narrow commercial interests. Under the Australian federal system, poor coordination between any of the three levels of government – national, state, and local – is particularly problematic. Australian experience also suggests a particular role for government in the fostering of new industries, in partnership with the private sector, and in finding mechanisms which deliver public good outcomes – such as environmental services – in association with private investments for private returns.

To date, all State governments other than Victoria's, have preferred to retain state plantation forestry agencies within government, though as increasingly commercially focused government business entities. In some states, notably Tasmania, the corporate state forestry enterprise has entered into various forms of joint venture partnership with the private sector as a means of expanding the plantation estate and/ or enhancing its commercial focus. The reasons that governments have chosen this intermediate option, rather than that of full privatisation, largely reflect the concerns of many Australians about the potentially adverse effects of privatisation more generally, the regional economic and thus the political significance of the established plantation forests and the processing industries dependent on them, and the political difficulties inherent in selling State land on a large scale, particularly to non-Australian investors. However, given the high level of commercial performance expected by State governments of the commercialised plantation growers, there may not be significant differences over the longer term in the behaviour of the commercialised state and privatised plantation growers.

### **THE BALANCE BETWEEN PUBLIC AND PRIVATE INTEREST IS A CONTESTED CONCEPT**

The appropriate balance between public and private interest is, of course, contested. For example, the Australian experience with taxation incentives suggests that they can be a very powerful means of generating significant private sector investment in some forms of plantation forestry, but it is also

arguable – and a widely-shared view in some plantation regions - that the rapid expansion of plantations which they generated was insufficiently tempered by appropriate land use planning and conflict resolution frameworks. Similarly, there is ongoing debate about the extent to which government agencies should enter into wood supply agreements on particularly favourable terms with regionally-important processing industries, to which governments should co-invest in plantation expansion for regional economic development and environmental services, and to which governments should consider plantation crops to be treated as “just another agricultural crop” under planning and regulatory regimes. In general, Australian governments appear to have chosen to retain their option to play a direct role in plantation forestry through State forestry agencies, albeit in different terms to those they have played historically. In some States, for example Western Australia, the state agency’s role has been critical in catalysing complementary private sector investment in new forms and locations of plantation forestry.

### **THERE ARE VARIOUS FORMS OF “PRIVATISATION”**

Australia’s federal structure of government, and its political and geographic diversity, has fostered a diversity of institutional arrangements for plantation forestry. It has also allowed the evolution of a spectrum of privatisation, from the complete privatisation of State-owned plantations to their corporatisation, the development of a range of public-private partnerships in a variety of forms of plantations, and the encouragement of private rather than public sector investment. The Australian experience suggests that each of these forms of privatisation has strengths and limitations: the closer to full privatisation, the stronger the commercial imperatives, the greater the access to private capital, and the more sophisticated the public policy instruments required to deliver public good outcomes; conversely, the further from commercial orientation, the greater the need for ongoing public sector investment, but the more easily that investment is directed to meet public policy goals.

Australia’s experience of privatisation outside the forestry sector suggests that neither unfettered privatisation, on the one extreme, nor retention of highly regulated quasi-government entities, on the other, are likely to be optimal where a balance of public good and economic efficiency outcomes are sought. It is probably too early to draw any conclusions in these terms from the relatively recent experience of privatisation in Australia, but the various models of privatisation reflect, implicitly or explicitly, the different State governments’ judgements of how that balance is best struck, and offer fertile ground for future studies as the various models evolve and their consequences become clearer. There are also models of privatisation which have not yet been applied to Australian forestry agencies - for example, through their floating as publicly listed companies, perhaps with a share issue to that state’s taxpayers. – which might deliver a different mix of public and private benefits and costs.

### **VARIOUS FORMS OF PUBLIC-PRIVATE PARTNERSHIPS CAN WORK WELL FOR ALL PARTIES**

Australian plantation forestry is characterised by a variety of forms of public-private partnerships, from joint policy initiatives and the development of joint investment products to on-ground joint ventures between state forest agencies and landowners and collaborative research and development programs. As the interests and behaviour of state forestry agencies and corporate plantation growers have converged, so has their capacity to cooperate and well as to compete. The strong commercial focus of state forest agencies means that they are, appropriately, indistinguishable from the private sector from the perspective of environmental and industry regulators – but, in this realm as in others, systems based on partnership appear to work better than those which are adversarial. Both governments and the private sector need also to find vehicles, such as certification, for partnership with the community and with ENGOs, to ensure the community support necessary to sustain plantation forestry. Delivery of non-commercial and non-market benefits from commercial plantation forestry is a particular policy and operational challenge. Governments have generally addressed this for state plantation growers by the provision of community service obligation payments; debate continues about the appropriate form and level of cost-sharing between public and private interests for the case of private forest growers. The Australian experience suggests that a diversity of forms of public-private partnership are necessary to respond to the particular economic, social and environmental dimensions of different States and regions.

## **ENGAGING SMALL-SCALE GROWERS FULLY IN PLANTATION FORESTRY IS PARTICULARLY CHALLENGING**

The Australian experience also suggests that engaging small-scale growers fully in plantation forestry is particularly challenging. Small-scale prospective forest growers face many obstacles in addition to those faced by industrial-scale forest plantation growers. These include operational (eg diseconomies of scale, access to labour and skills), market (eg limited access to capital, lack of market information, small volumes of product) and personal (eg more diverse objectives, cultural norms) constraints. Australian forest policy has sought to address these constraints for nearly 20 years, with only modest results. Policy has succeeded in fostering much more of a tree growing culture among farmers, but the markets required to drive reforestation on a large scale have yet to emerge for other than a few, mostly commodity, products in particular regions with strong market opportunities. Innovative attempts to address these challenges, particularly in forms which integrate tree growing with traditional agricultural production, demonstrate both exciting potential and the significant constraints which limit the development of new industries. The Australian experience suggests a strong partnership role for both the state and corporate entities is necessary if the participation of small-scale growers in various forms of plantation forestry is to be fostered to a point where it can be self-sustaining.

## **THE BEST MIX OF REGULATION AND INCENTIVE FOR PRIVATE FORESTRY WILL VARY WITH CONTEXTS**

The diversity of regulation and incentive structures relevant to private plantation forestry across and within the Australian states offers clear evidence both that some forms of incentive and regulatory systems work better than others. For example, forest practices systems based more on “new generation” environmental instruments than on complex regulatory structures are much more cost-efficient in meeting regulatory goals; joint venture or leasing arrangements with small-scale landowners which involve payment of annuities are much more successful than those in which payment is deferred to harvest. The Australian experience suggests that, while there are principles which apply generally to both incentives and to regulation, there is also the need to adapt policy frameworks to the particular community, business and political environments of plantation regions.

Recent Australian experience with prospectus-based investment in plantation forestry suggests that one of the strongest incentives for private sector plantation forestry investment is to ensure that it suffers no more obstacles than do investments in alternative land uses. Similarly, in terms of removing distortions from investment and land use decisions, the Australian experience also suggests that forest practices systems should apply similarly to both public and private forestry, and that appropriate environmental standards should to apply to agriculture land use alternatives as well as to plantation forestry.

## **1.9 Conclusions**

Australia's governments are intent on continuing down the established path of the past decade, towards maintaining “small government” and facilitating both domestic and international investment in the Australian forestry sector. However, most have preferred to retain state forestry agencies within government, as quasi-commercial trading enterprises, than to privatise them fully. The reasons for this are a matter of debate, but arguably point to the regional economic and thus the political importance of the established plantation forestry and processing industries. Concurrently, Australian governments have encouraged and enabled the private sector to expand Australia's plantation forests, through favourable taxation arrangements for plantation investors and through facilitation of a diversity of forms of public-private partnership in plantation forestry. These have been more successful with large- than with small-scale forestry, although the latter has been and remains a political priority. Governments have also sought, though not yet particularly successfully, to develop consistent industry and environmental regulatory regimes for plantation forestry across jurisdictions, tenures and land uses.

The Australian experience with plantation privatisation, in the broad sense, suggests that the more commercial orientation of corporatised government forestry agencies has been in the public interest in

many respects, although there have been adverse impacts on, for example, direct employment. There are advocates both for and against the continuation of the corporatisation process to full privatisation. Whether or not full privatisation becomes more common, governments will need to continue to develop more sophisticated policy regimes and instruments to deliver many public policy goals from a more commercial, more widespread, and more important plantation forestry sector.