Reforestation Incentives in the UK and Australia: A Comparative Evaluation

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This paper explores government objectives and intervention methods to encourage reforestation in the United Kingdom and northern Australia. Differences between the measures adopted, and reasons for these differences, are examined. The UK and Australia are both substantial net timber importers. In both countries, governments place high priority of reforestation on private land, for timber production and environmental and landscape reasons. Government intervention is believed to be justified because social benefits are substantial and private benefits insufficient to induce planting. Incentives provided differ clearly between countries. The Forestry Authority and Departments of Agriculture have been the prime force behind support for tree planting in the UK. In Australia, State and to a lesser extent local government has been the driving force in promoting reforestation.

Woodland planting grants are the favoured incentive scheme in the UK, while in Australia joint venture schemes and direct tree planting assistance for growing native species are adopted. Taxation treatment also differs markedly - in the UK reforestation is outside the taxation net whereas in Australia expenditures are deductible in some circumstances. In both countries, there is an emphasis on planting degraded or less productive agricultural land.

Intervention measures currently adopted have evolved and been refined in both countries over time. It is perhaps surprising that they have taken such different directions. In recent years, UK reforestation policy has been influenced by the high cost of the Common Agricultural Policy and the need to divert land out of farming. In spite of a relative abundance of agricultural land, motives for reforestation in Australia have not been supply control. Lower support levels have been provided, and less reforestation taken place. There would appear to be limited scope for transferring elements of the support programs between countries.

INTRODUCTION

Australia and the United Kingdom are both significant timber importers and both have a history of government support schemes to promote private forestry, for timber production and environmental reasons. Progress in reforestation appears to have been relatively slow in both countries. In this paper, we ask “How does intervention differ between these countries?” and “Do the differences arise randomly due to history or personalities in forest management agencies, or are they systematic and explainable by difference production circumstances, planting impediments, policy environments, etc?” If the former, could policies of one country be transferred to the other? If the latter, are there any elements which might work in the different policy environments?

The paper examines forestry support systems in the UK and Australia, the differences in environments under which they operate, and the differences between support measures and their performance between countries. Observations are then made about the reasons for
differences, and whether there are any lessons which arise that are relevant for policy purposes.

**WOODLANDS AND GOVERNMENT SUPPORT PROGRAMS IN THE UK**

In comparison to other European countries, Britain is sparsely wooded, with only 2 m ha or 10% of the land surface devoted to forestry. Even so, the presence of many small woods and hedgerow trees gives the appearance of much more extensive tree cover, in places creating a most attractive rural landscape.

The structure of the forestry industry in the UK and the origin of support for the sector can be traced back to the beginning of this century. Progressive clearing of woodlands over time had reduced tree cover to just 4% of the land area. This left the country dangerously exposed to inadequate supplies of timber for defence needs during the First World War (1914-1918). As a result, in 1919 the Government established a state forestry authority in the form of the Forestry Commission (FC). This body was charged with the twin objectives of producing timber directly and encouraging private landowners to do likewise. The FC was responsible for much of the restocking and new woodland planting which took place in the inter-war years.

The Second World War (1939-45) again brought heavy demands on home-grown timber supplies, with reserves approaching critical levels. Active re-stocking commenced after the war. From the mid-1950s new plantings were concentrated in the upland areas, particularly in Scotland and Wales, to provide socio-economic benefits to these regions. Felling controls which had been introduced as emergency measures during the war were made permanent under the *Forestry Act* of 1951. These require woodlot owners to obtain a licence before felling trees, and to restock after harvest, thereby preserving much of the planated area.

Under arrangements introduced in 1947 to encourage private plantings, grant-aid was made available to the landowners who entered into an undertaking to 'dedicate' their woodland to the production of timber into perpetuity. The scheme became known as the Dedication Scheme and remained in operation, albeit with some modifications, until 1981, when it was superseded by the Forestry Grant Scheme. This scheme offered a capital sum as a contribution towards the cost of establishing woodland.

Another incentive to establish new woodlands was provided by the tax system which gave relief from income tax for the cost of establishing new woodlands but at the same time did not tax the revenue. The tax system was put into reverse and in effect subsidised tree planting. The higher the marginal rate of tax the greater the subsidy. As the highest rate of tax reached 83% on occasions some investors were only having to find 17% of the cost of establishing new woodland on an after-tax basis. Not surprisingly this policy acted as a powerful stimulant to new woodland establishment. However, the scheme criticised for farouring high-income taxpayers and encouraging silvicultural systems that were harmful to the environment (Helliwell, 1988). In response to these criticisms, the Government withdrew forestry for the income tax system in 1988 and by way of compensation introduced more generous grant aid arrangements.
Direct state involvement in tree plantings resulted in a Forestry Commission estate of 844,000 ha in March 1997, compared with 1.6 m ha of private woodlands. Just under 90% of Forestry Commission woodlands are planted to conifer species and 60% are located in Scotland. Despite the success of the Forestry Commissions planting programmes, the UK remains heavily reliant on imports and currently is able to supply only 10% (by volume) of the wood needed to meet timber and wood product requirements. As more recently planted forests reach maturity it is estimated that the degree of self-sufficiency from new wood grown in the UK could reach 20% by the year 2020.

The Woodland Grant Scheme and forest policy in the 1980s

The Woodland Grant Scheme was introduced in 1988 to replace the earlier Forestry Grant Scheme and the Broadleaved Woodland Grant Scheme. It has been revised on a number of occasions. The Woodland Grant Scheme is administered by the Forest Commission and aims to encourage good management of existing woodland and the establishment of new woods for timber production and landscape improvement, and to provide employment, an alternative use for land in agriculture, habitat for wildlife, and opportunities for recreation and sport. It provides Establishment Grants towards the cost of planting up new woods or undertaking work which will encourage natural regeneration. The rate of grant is determined by the age and area of wood, conifer or broadleaved, and whether new planting or restocking is taking place. Levels of payment are set out in Table 1.

<table>
<thead>
<tr>
<th>Woodland type</th>
<th>Amount of assistance (£/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New Planting $^1$</td>
</tr>
<tr>
<td>Conifers - any size of wood</td>
<td>700</td>
</tr>
<tr>
<td>Broadleaves - less than 10 ha</td>
<td>1350</td>
</tr>
<tr>
<td>- 10 ha and above</td>
<td>1050</td>
</tr>
</tbody>
</table>

1 Payment is 70% after planting and 30% in year 5.
2 Payment is 100% after planting once establishment has been achieved through national regeneration.

A number of important supplements are also available. These include

- a Better Land Supplement of £600/ha where new woodlands are established on arable or improved grassland.

- a Community Woodland Supplement of £950/ha for new woods within 5 miles of the edge of a town or a city and where there are few other woods that can be used by the local community. Free public access must be given and suitable car parking facilities made available.
• A Location Supplement of £600/ha (to a maximum of 10 ha) if new planting takes place in designated areas of one of the 13 Community Forests.

• Annual Management Grants of £35/ha for woods of any age which have special environmental potential or where public access is provided, and

• Livestock Exclusion Premia of £80/ha for up to 10 years for keeping livestock out of certain types of woodland in Less Favoured Areas.

Ninety per cent of broadleaved woods are privately owned and three-quarters are located in the lowlands of Southern England. Over 200,000 ha (16%) of woodland in England and Wales are located on agricultural holdings and it has been estimated that the average area of woodland on those farms which have any is only 6 ha.

Woodlands on lowland farms are unlikely to make a significant contribution to income, not only because of the small areas involved but also because the production of broadleaved timber is relatively uneconomic, especially when compared to the returns that could be gained from using the land for agriculture. Indeed the period since the end of WW2 up to the mid-1980s was characterized by farmers clearing small woods so that the land could be used for agricultural purposes. However, the mid-1980s proved to be a watershed for forestry policy, not just for the lowlands but also for the uplands.

A significant change in policy resulted from a coincidence of pressures. A report by the National Audit Office published in 1986 questioned the economic justification of the Forestry Commission investing further public funds in creating new conifer forests on marginal land in the uplands of Scotland. New plantings in the future were expected to become increasingly concentrated on sites which were marginal for timber production. Afforestation land would be unlikely to yield an acceptable return on capital. In addition, the authors of the report argued that it was difficult to make a case for further afforestation on the grounds of employment creation. Relatively few new jobs are created in the establishment phase of a new forest and the bulk of employment occurs at the end of the production cycle when the trees are felled and the timber processed.

Conservationists became increasingly critical of continued afforestation in Scotland and Wales. Further new plantings would rapidly consume the remaining areas of unimproved marginal land, resulting in the destruction of scarce wildlife habitat and traditional landscape patterns. In particular, the tax avoidance schemes mentioned earlier began to attract widespread adverse publicity. Concern was also being expressed that neglect or clearing for agricultural use would destroy many of the remaining areas of broadleaved woodlands in the lowlands, to the detriment of the landscape and wildlife habitat. In 1984 the Forestry Commission adopted a policy that it would not issue felling licences for the purposes of clearing broad-leaved woods in order to convert land to agricultural use. At about this time the budgetary crisis of the Common Agricultural Policy, which resulted from ever mounting surpluses of agricultural produce, prompted a search for alternative uses for agricultural land. The creation of new woodlands on farms in the lowlands was identified as one possible avenue as it would take land out of agriculture, provide alternative employment opportunities
for those engaged in farming and meet the demands of the public for conservation of the environment.

The Farm Woodlands Scheme

In an endeavour to encourage farmers to plant trees on agricultural land the Government introduced the Farm Woodlands Scheme in 1988 as a pilot scheme. It was subsequently replaced in 1992 by the Farm Woodlands Premium Scheme and is administered by the Ministry of Agriculture, Fisheries and Food although applications to participate in the scheme are made to the Forestry Authority. To qualify for entry into this scheme the woodlands being planted must also be in receipt of the Establishment Grant under the Woodland Grant Scheme. The rate and duration of annual payments depend on the type of land being planted, its location and the type of trees being planted.

Table 2: Farm Woodland Premium Scheme

<table>
<thead>
<tr>
<th>Location</th>
<th>Location 1</th>
<th>Annual Payment (£/ha)</th>
<th>Arable Land 2</th>
<th>Other Improved Land 3</th>
<th>Unimproved Land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowlands</td>
<td></td>
<td></td>
<td>300</td>
<td>200</td>
<td>Ineligible</td>
</tr>
<tr>
<td>Disadvantaged Areas</td>
<td></td>
<td></td>
<td>230</td>
<td>200</td>
<td>60</td>
</tr>
<tr>
<td>Severely Disadvantaged Areas</td>
<td></td>
<td></td>
<td>160</td>
<td>140</td>
<td>60</td>
</tr>
</tbody>
</table>

1 Disadvantaged Areas are the original Less Favoured Areas, Severely Disadvantaged Areas are the new Less Favoured Areas.
2 Arable Land is land eligible for Arable Area Payments.
3 Other Improved Land is grassland where the sward comprises minimum quantities of designated grass species.

Annual payments continue for 15 years for woodlands containing more than 50% by area of broadleaved trees and 10 years for woodland containing less than 50% broadleaved trees or fast growing broadleaves that will be felled in less than 30 years (e.g. poplars).

In addition to the Establishment Grant payable under the Woodland Grant Scheme, plantations on arable and other improved land will be eligible for the Better Land Supplement. Joint participation in the Farm Woodland Premium Scheme and Woodland Grant Scheme can secure initial payments approaching £2000/ha per for small broadleaved woods planted on arable or other improved land plus annual payments totalling a further £4500 over 15 years. Given the level of incentives provided it is not surprising that there has been significant interest in the Farm Woodland Premium Scheme with 6000 applications covering 37,000 ha approved for the UK in the period April 1992 to June 1997. The average area per business is a little over 6 ha. More than three quarters of the area approved is for broadleaves (88% in England).

Farmers in planting woodlands appear more concerned with enhancing the landscape and creating new wildlife habitat than in earning revenue, as indicated in Table 3.
Table 3: Objectives for planting trees rated by farmers as highly important

<table>
<thead>
<tr>
<th>Reason for planting</th>
<th>Proportion of farmers stating this reason (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhancing the landscape</td>
<td>79</td>
</tr>
<tr>
<td>Creation of new wildlife habitat</td>
<td>68</td>
</tr>
<tr>
<td>Timber production</td>
<td>49</td>
</tr>
<tr>
<td>Provision of sporting use</td>
<td>46</td>
</tr>
<tr>
<td>Provision for shelter</td>
<td>31</td>
</tr>
<tr>
<td>To maintain employment</td>
<td>10</td>
</tr>
<tr>
<td>Provision for recreation</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
</tr>
</tbody>
</table>


The EU decision to allow woods planted on arable land qualifying for Arable Area Payments and grant aided under the Woodland Grant and Farm Woodland Premium Schemes to count towards a farmer’s *set-aside* objectives has significantly further enhanced the attraction of planting new woodlands. The income forgone is now the set-aside payment (circa £325 in 1998) rather than the higher gross margin for an arable crop. Insofar as annual payments under the Farm Woodland Scheme are intended to compensate the farmer for loss of income from agricultural production, they are liable to income tax, although other income from woodlands including grants under the Woodland Grant Scheme are not liable to income tax.

As a result of the combined activities of the Forestry Commission and private owners, more than 650,000 ha of new woods were planted in the period 1970 to March 1997. A number of discernible trends were evident in this period. First the annual rate of planting declined from more than 40,000 ha per year in the early 1970s to under 20,000 ha per year in the 1990s. This can largely be accounted for by the fact that new planting by the Forestry Commission which had been in excess of 20,000 ha per year in 1971 and 1972 fell steadily to less than 1000 ha per year in the mid 1990s. New private woodlands were being established at the rate of 20,000 ha per year in the early 1970s more than halved in the mid 1970s only to gradually increase again to 25,000 ha in 1989 before falling to 15,000 ha per year in the early 1990s, following withdrawal of the special tax status which forestry used to enjoy.

The second major change over the period has been in the balance of tree species planted. In the period from 1970 to 1987 broadleaves accounted for only a tiny fraction (less than %) of new woodland. It was not until 1987 that the area of broadleaved planting exceeded 1000 ha per year. It then steadily increased until by the mid 1990s broadleaves accounted for more than half of new woods being established. Indeed in the year to March 1997 broadleaves account for 57% of new woodland. Much of this increase in broadleaved planting can be attributed to the Farm Woodland Premium Scheme. A third development has been the sale of land by the Forestry Commission to the private sector. In total there was a net reduction of 190,000 ha in the Forestry Commission’s estate between 1980 and 1998, although not all of this land was planted up woodlands.
Whilst the Woodland Grant and Farm Woodland Premium Scheme are now the primary instruments for implementing government policy, other significant developments have been put in place to influence new woodland establishment. These aim to increase recreational provision and provide nature conservation benefits. The schemes include 12 Community Forests in England where the intention is to establish woods on up to 30% of the designated area over a 30 to 40 year period. Also included is a plan to establish a new national forest in the Midlands covering about 50,000 ha, although only one-third will be planted with trees.

By any standards forestry in the UK is an extremely long-term undertaking: the rotation interval for conifers is usually 50 or more years and can exceed 100 years for hardwoods. Excluding the cost of purchasing the land, expenditure over a 10-year period needed to establish a 100 ha upland conifer plantation is likely to be of the order of £125,000 to £140,000 before grant aid. Investment in forestry on this scale and over this time horizon is only likely to be contemplated by individuals sufficiently wealthy to finance the initial outlay and whose family can afford to forgo a return for many years usually extending well beyond the lifetime of the investor.

Timber production from farm woodlots is easier to finance but more difficult to justify in revenue terms. A considerably smaller capital outlay will usually be required, simply because of the small size of most farm woods. However, costs per hectare are liable to be 20% to 30% greater because economies of scale are not available and this will reduce the rate of return on capital. The higher rates of grant for small woods reflect the greater costs of small-scale operation. Similarly, the high rate of grant for broadleaves reflects the higher costs of establishment, which can be 50% to 100% more than for conifers.

An alternative forestry investment is available through the various forestry companies in which private investors can buy shares. The companies may offer the benefit of re-investment relief from Capital Gains Tax. Such companies buy from a few hundred up to 5000 ha of productive woodland, which is usually managed by a forestry management company. City institutions, notably pension funds and insurance companies, appear to be ideally placed to invest in forestry because they have large sums of capital available, a proportion of which could be committed over a relatively long period.

FORESTRY SUPPORT PROGRAMS IN AUSTRALIA

At the time of British settlement in 1788, forests covered nearly 9% of Australia (Alexander, 1966). Current forest cover as a percentage of land area varies between states, from 43% in Tasmania to less than 1% in Western Australia and South Australia, with a national average of 5.3% (ABARE, 1995). Timber harvesting and processing has been an important pioneering industry in Australia, with much grazing and cropping land opened up by clearing native forests. Until about 20 years ago, taxation deductions were allowed for “timber treatment”, and there was rapid loss of tree cover. In recent years, forestry has been a declining activity, with expansion of National Parks and World Heritage Areas. Management of public forests is undertaken by state forest services (SFS). “The total plantation area in
Australia is 1.1 million ha, of which 770 000 ha (70%) is state-owned. Of the remainder, approximately 275 000 ha (25%) is under corporate ownership and 55 000 ha (5%) farm forestry” (AACM et al., 1996, reported in Greening Australia, 1996).

Like the UK, Australia lacks self-sufficiency in forest products, importing about $1b worth of timber and a similar values of timber products including paper each year. Self sufficiency levels as at 1990 were: hardwood 85%, softwood 54%, newsprint 57%, and printing and writing paper 41%; further, self sufficiency was expected to remain unchanged for hardwood and softwood but increase for newsprint and printing and writing paper in forecasts to 2030 (RAC, 1992, p. 293).

The last three decades in Australia have borne witness to political, environmental and economic factors that have generated interest in promoting private farm forestry. In particular, bitter public policy debates between the forestry profession and environmental conservation lobby groups have resulted in significant tracts of native forest lands being withdrawn from timber production. The current Regional Forest Agreement process will result in another large withdrawal of forests from the timber industry. As a consequence, forestry has become a declining activity in recent years. At the same time, expansion of SFS plantation areas has become increasingly difficult for at least two reasons. First, under the National Forest Policy Statement to which all states are signatories, “Governments will adopt the policy that further clearing of public native forests for non-forest use or plantation establishment will be avoided or limited …” (Commonwealth of Australia, 1992). This and other clauses in the Statement have been taken to mean that native forest is not to be cleared for plantations. Second, forests are most productive on high-rainfall moderately fertile coastal lands. Since much of this land is of high value, acquiring additional land for government managed plantations is of doubtful economic viability.

The task of developing the foundations for a privately held forest resource is not an easy one. Potential impediments include the absence of a culture or tradition of private forestry; adoption of unsustainable forest management practices associated with clearing land to be used primarily for agricultural activities; and neglect of an integrated and comprehensive policy on forestry by successive governments and policy makers. As well, forest policy has resulted in a tradition of underpriced timber because it has been driven by social and regional issues as opposed to competitive market forces, and this has reduced profitability of timber production (Harrison and Tisdell, 1994).

In response to these impediments to the successful development of a private forestry sector, a variety of support schemes have been adopted over many years, though none with particularly notable success. While areas of forestry planted on private land are as yet modest, there is an expectation that this will become a significant industry and there is a commitment from all levels of government (federal, state and local) to achieving this goal. To date, the initiatives developed have been diverse in nature because of substantial regional diversity in historical, cultural, political and physical circumstances throughout the various states in Australia. The end result is an emerging continuum of forestry policy, which includes initiatives purely concerned with generating commercial profits from tree planting, to schemes that balance commercial profit with complex environmental objectives. On a
national basis, the Greening Australia and Landcare programs have been influential in promoting positive attitudes to farm and other small-scale forestry. More recently, funding has been provided for conservation plantings under the National Heritage Trust. It is not clear how much of the reforestation under these three programs will lead to timber production. Joint venture schemes with a clear focus on commercial timber production now operate in most states, and a variety of initiatives such as share-farming arrangements have been taken by individual states. Some of these programs are now reviewed.

**Greening Australia**

In 1982 the United Nations Association of Australia sponsored an Australian “Year of the Tree” to draw attention to deforestation. The Prime Minister announced the establishment of the National Tree Program (NTP), designed to reverse tree decline throughout Australia (DASETT, 1987, p.6). The first step in developing the NTP was the establishment of a National Co-ordination Committee (NCC) to advise the Minister for Home Affairs and Environment on the program. The NCC had representation from each States and Territory, local government and a range of non-government organisations. The NCC remained active and during 1984-85 formulated a strategy for implementing the NTP, with the objectives of

- selectively increasing tree cover in rural areas;

- promoting co-ordinated action by individuals, government and the community generally to conserve plant and regenerate trees; and

- developing public awareness of the value of trees (DASETT, 1987, pp.8-9).

The “Year of the Tree” also stimulated the establishment of several state committees to undertake tree projects and promotional activities. The central organising committee and various local committees subsequently continued as a non-profit organisation called Greening Australia (DASETT, 1987, p.5). This is a national organisation which, in effect, provides the non-government arm of the NTP. It is represented in each State and Territory and has a national office in Canberra. With support from the Commonwealth, State and Territory governments, it has become the prime focus for non-government tree planting activities. Much of the activity is directed towards securing support from governments and the corporate sector and the general community for projects sponsored by other groups. This is done through dissemination of information, endorsement of projects, raising funds and providing a link between government and the non-government organisations (DASETT, 1987, p.10).

An example of the types of activities undertaken by Greening Australia is provided by the “Trees for Life” project in South Australia, which has served as a prototype for similar activities undertaken in other Australian states. Under this project, free local native plant seedlings are supplied to rural landholders for re-vegetation of their land. Volunteer urban dwellers raise the seedlings for the rural landholder and then assist in planting them. The total cost to the landholder is $40 which comprises membership of the program and a $15 order
lodgement fee. In 1997, this scheme alone resulted in 15.9 m trees being planted on rural land in South Australia.

**National Landcare Program and One Billion Trees Program**

The “Decade of Landcare” (1990s) initiative was launched in the 1989 *Statement on the Environment* by the then Prime Minister (Commonwealth of Australia, 1997, p.1). This initiative prompted a review of the natural resource management programs in the Primary Industries and Energy portfolio, which in turn led to the establishment of The National Landcare Program (NLP) in 1992 (Commonwealth of Australia, 1997, p.2). The scope of the NLP extends to cover both natural resource management in catchments and community landcare action.

The *Natural Resource Management (Financial Assistance) Act 1992* was introduced to provide a statutory basis for involvement of the Commonwealth Department of Primary Industries and Energy (DPIE) in natural resource management, including the funding of programs carried out by the States and Territories. The Act also resulted in the establishment of the National Landcare Advisory Committee (NLAC), which provides a community consultation forum. The NLAC reports to the Commonwealth Ministers responsive for DPIE and the Department of Environment, Sports and Territories (DEST). At the same time, a number of other natural resource management programs were brought under the administrative umbrella of the NLP to simplify project application and approval procedures. For example, the community group grants elements of the *One Billion Trees Program* (OBT) and the *Save the Bush Program* (STB), both of which are administered by the DEST through the Australian Conservation Agency, were brought within the administrative sphere of the NLP. This arrangement was expanded when the NLP was broadened to encompass all aspects of the OBT and STB (Commonwealth of Australia, 1997).

The *One Billion Trees* program is administrated by Greening Australia and is designed to help the community plant and regenerate one billion trees by the year 2000 (Commonwealth of Australia, 1992, p.20). Its goal is to ensure that during the Decade of Landcare, at least 400 m trees will be established through community planting of seedlings, and at least 600 m through the increasingly better known methods of direct seeding and assisted natural regeneration (Commonwealth of Australia, 1990, p.21).

Since the launch of the Decade of Landcare initiative, the number of landcare groups in Australia has significantly increased. By 1994 the number had reached 2200, which exceeded the 2000 target that had been set for the whole of the Decade Commonwealth of Australia, 1997). There are now more than 4250 landcare groups in Australia, and about one in three farmers is a member (http://www.dpie.gov.agfor/landcare/prog/description.html). Funding for Landcare programs has come from both the government and the corporate sector. For example, funding from the Commonwealth increased from $73.1 m in 1989-90 to $115.4 million in 1993-94, while the corporate sector provided financial assistance totalling $4.5 m in 1993-94 (Commonwealth of Australia, 1997). Funding has reached a new high of $87.4 m in 1987-88, including $35 m from the National Heritage Trust.
**National Heritage Trust**

Upon part-privatisation of Telestra in 1997, the Australian government committed $1.25 b over six years through the National Heritage Trust (NHT) to conservation and natural resource management. Funding is being directed mainly through community projects. Some funding is being directed to DPIE through the farm forestry project. A major emphasis of the NHT is riparian revegetation in the Murray Darling Basin.

**Vision 2020**

As reported in DPI Forestry (1998), the Ministerial Council on Forestry, Fisheries and Aquaculture is developing a strategy to achieve the *Plantations for Australia: The 2020 Vision*, with the goal of trebling the nation's plantation estate by the year 2020. The implications of this goal for the size of the plantation estate in each state are not yet clear. However, key elements will include boosting the availability of suitable land; enhancing the commercial incentives to attract significant levels of private investment; developing a plantation culture within local communities; and improving information flows about plantation profitability and prospects. This may involve a change in focus from private forestry aimed at small farm plantings towards large-scale industrial plantings. A need to attract institutional investors and superannuation funds, and significant foreign investment from the Asia Pacific region, has been identified.

**Nationwide state-based initiatives – plantation joint venture schemes**

Incentive schemes to establish private (particularly farm) forestry has tended to arise on a state-by-state basis, with fragmented development of schemes of varying complexities and objectives. However, it has recently become obvious that SFS in each state are beginning to examine the experiences of other states in relation to establishing private plantations. This has allowed “best practice” measures to be adopted in new state initiatives. Two examples of forestry incentive schemes that have been adopted within several states are the plantation joint venture schemes and share-farming arrangements.

In Australia, forestry joint ventures have been established in most states (Dargavel and Semple, 1990; Lyons, 1994; Spencer, 1994). APPM Forests Pty Ltd introduced a softwood share-farming joint venture in Tasmania as far back as 1950, and a eucalypt joint venture scheme in 1970. Kimberley-Clark Australia Pty Ltd has instituted agreements for growing *Eucalyptus globulus* in South Australia and Victoria, with guaranteed prices for all suitable timber. State Forests of New South Wales introduced a eucalypt joint venture scheme with landholders (including local authorities) in 1994.

The *Queensland Plantation Joint Venture Scheme* for which first plantings took place in 1997 was devised on the basis of accumulated experience from other states, and particularly NSW. Three regions in the state have been selected for planting, and joint ventures are implemented only on sufficiently fertile land, with average annual rainfall above 900 mm and slope of less than 20 degrees. Land parcels are required to be located within 200 km of the nominated
major cities, preferably near existing government plantations. The minimum area is 10 ha per landholder. A joint venture deed is signed between the landowner and the Primary Industries Corporation. It is a requirement that the landholder remove any existing vegetation on the site, ensure road access and construct fences to exclude livestock during the establishment period.

The land is valued by an independent valuer, and 5% of the plantation land value (up to a maximum of $150/ha) is regarded as an input of the landholder each year, with land value indexed according to the annual rise in the Consumer Price Index. Tasks such as weed control, fertilizing, thinning and pruning can be carried out by the landholder (to a standard required by DPI Forestry) or by contractors, and in the latter case payment may be by government or the landholder. Neither party can have greater than 80% equity, with shares varying over time due to land rental and discretionary inputs of the landholder.

Revenue is generated from commercial thinnings about year 10 to 15 and later harvests of poles and sawlogs (about 35 years). Capital requirements for a 10 ha planting could be expected to be of the order of $20,000. Assuming a harvest age of 40 years, MAI of 20 m$^3$, stumpage price of $60/m^3$, the gross return at current prices would be $48,000/ha.

A survey of landholders (Harrison et al., in press) revealed that only 26% described themselves as farmers, compared with 47% in trades or professions. In terms of perceived obstacles to tree growing, greatest concern was over harvest rights, followed by capital availability, long wait for returns, flexibility of future land use then labour required. The main strengths of the Plantation Joint Venture Scheme were considered to be provision of technical expertise in growing trees by DPI Forestry, followed by the opportunity to generate financial returns then input of capital by DPI Forestry. Other benefits reported included landscape amenity and conservation benefits, and to a lesser extent land rehabilitation and enterprise diversification. Supply of labour was rarely mentioned. Surprisingly, the flexibility of the joint venture contract under which landholders can elect how much of the expenditure they wish to finance was not highly ranked, nor was the marketing capability of DPI Forestry; it is possible that these will be accorded greater recognition as plantations progress.

A number of drawbacks were identified, of a legal and financial nature, which were ranked approximately equally. These include sharing of equity with government, long period in which land is committed to the investment, caveat on the land title and uncertain profit level. Interestingly, environmental issues also arose, including the limited choice of tree species, the need to clear existing vegetation during land preparation and the use of agrochemicals for pest and weed control. Removal of stumps at the end of the tree rotation was of concern for cropping land.

The *Eucalyptus Plantation Joint Ventures Scheme* of State Forests of NSW is similar to the Queensland scheme. The minimum area is 20 ha. Areas planted must have an annual rainfall of at least 900mm and slope generally less than 18 degrees. The main objective of the joint venture is specified as “commercial production of hardwood timber from eucalypt plantations” (State Forests of NSW, 1998, p.1).
Under the joint venture schemes in both states, the landholder has clear title to the land and so may sell it at any time, providing that the joint venture arrangement transfers to the new owner. In addition, the joint venture agreements recognise the conservation value of trees and allow the landholder to convert part of the plantation as permanent woodland, in return for increased State equity on the remaining area.

**Nationwide state-based initiatives – share-farming schemes**

Share-farming arrangements were introduced by the Department of Conservation and Land Management (CALM) in Western Australia in 1985 to produce eucalypts for pulpwood export. These developments foreshadowed the establishment of *CALM Sharefarms, Lower West* in 1994. To date, major Korean and Japanese trading houses and paper companies have invested $150 m in the project (CALM, 1998, p. 2). The basic objective of *CALM Sharefarms, Lower West* is to grow Tasmanian Bluegum (*Eucalyptus globulus*) on behalf of investors who take delivery at harvest. The land to be used in these plantations is provided by private landholders in exchange for annual fees or lump sum payments on harvest. Participating landholders must have a minimum total area of approximately 20 ha of cleared land which has been pastured for at least five years, in an area that receives annual rainfall at least of 600mm and is no more than 200km by road from metropolitan areas.

It is expected that the sharefarming contract will run for approximately 20-28 years because the trees are grown on two rotations, which range from six to 14 years according to productivity and market conditions. Under the contract, CALM will plant the land in a block or integrate the trees around other crops and pasture in order to satisfy the plantation design preferences of individual participants. The financial returns received by the landholder depend upon the contract options selected. The landholder may opt to receive an annuity; defer any payment and receive 33% share of the crop when it is harvested; combine an annuity with a lump sum payment when the crop is harvested; or defer any payment and invest money towards costs thereby increasing the share of the crop when it is harvested (with a maximum equity of 60%). Also, the landholder may chose to perform activities such as pruning and fertilising and be paid at contract rates.

Another sharefarming arrangement that has been implemented by CALM is the *CALM Sharefarms Maritime Pine* in agricultural areas close to Perth. This scheme has been labelled “landcare with an income” because it encourages the establishment of commercial plantations of Maritime Pine in areas that are under threat from salinity and waterlogging. The area targeted for the establishment of these plantations comprises the 400-600 mm annual rainfall zone near Perth and the coastal plain that stretches to the north and south. A minimum of 20 ha is preferred, although this can be made up of smaller blocks. These areas generally have poorer soil that is not suited to Bluegum or Radiata Pine. CALM sharefarms also allows a range of native tree species to be planted on land too saline for conifers, or in areas where landholders prefer the aesthetics of native trees. To date, the State government has committed $18 m per annum to plant up to 150,000 ha of conifers over the next decade.

Landholders provide land on which to grow Maritime Pine in exchange for lump sum payments each time the tree crop is thinned and at the final harvest. The land remains under
the legal control of the landholder while the trees are planted, managed and harvested by CALM. The financial returns earned are appropriated as 70% to CALM and 30% to the landholder. In addition, landholders may earn contract rates if they elect to carry out some of the plantation establishment work.

**Intergovernmental support schemes - the Community Rainforest Reforestation Program**

This is a unique form of State reforestation scheme in north Queensland. There was considerable social division in the region following the World Heritage listing of the Wet Tropics rainforests in 1988. The concept originated in the Department of Primary Industries in 1983 when 36,780 ha of land on the Atherton Tableland were identified as more suited to forestry or catchment protection than cropping and pastures (Kent and Tanzer, 1983a,b). Following a favourable consultants report (Shea, 1992), the three levels of government (federal, state forest service and 12 local authorities) joined forces with a view to planting 30,000 ha of native hardwood timbers on private land over 30 years.

A mixture of assistance measures with respect to provision of seedlings, planting and establishment labour and extension support is provided. The government does not take any equity in plantations, and only small financial contributions (initially none at all) are made by landholders. The rate of planting has been considerably less than originally envisaged. Nevertheless, the scheme has been a valuable social experiment designed to achieve four interrelated objectives, viz. develop a private plantation timber resource, arrest degradation of land following extensive inappropriate clearing, improve water quality in rivers and streams, and train a workforce to support rainforest plantation establishment (CRRP Management Committee, 1993). It has also been a valuable social healing process, a significant demonstration that mixtures of native cabinet species can be grown in plantations, and a demonstration that the various levels of government and landholders can cooperate in sustainable use of land resources.

Initially, landholders were motivated to plant largely by environmental reasons (Harrison et al., 1996), but subsequently there was greater emphasis on timber production (Creighton and Sexton, 1996). Local government involvement was motivated largely by a desire to provide employment and replace the timber resource lost through World Heritage listing of rainforests (Harrison et al., 1996).

The will to implement this program and relatively high level of success is all the more interesting given the history of farm forestry schemes in north Queensland:

“The North Queensland landscape is dotted with reminders of previous failed farm forestry schemes – particularly *Pinus carribea* and *A. cunninghamii* from the 1970s. Essentially these plots were established, but, once established, Government interest waned and there was no follow-up extension to ensure good silvicultural practices such as thinning were undertaken. The result is ‘locked up’ plantations, small in extent and limited in wood value. Many are being bulldozed or left to deteriorate and the message this sends to the broader community is that farm forestry does not pay.” (Crighton and Sexton, 1996).
With the commencement of the joint venture scheme, which in some cases competes for landholder participation, the state government reduced its level of support for the CRRP.

State-wide schemes

State-wide incentive schemes aimed at establishing private forestry have generally been of a limited time frame due to the short-term funding that is allocated. These schemes have also tended to be fragmented not only across states but even within states, as governments have changed and political agendas have been redefined and SFS restructured. As a consequence, there have been numerous schemes with many diverse objectives that have been undertaken within each state. Four examples of schemes currently underway within Australia are reviewed below.

The North East Farm Forestry Project is undertaken by the Department of Natural Resources and Environment (DNR) in Victoria. State Government funding is being provided for the three year period 1996-98, after which the government will withdraw from the scheme. The objective is to assist landholders to establish hardwood plantations on cleared agricultural land. Expressions of interest were invited from landholders who had cleared land, rainfall greater than 700mm per annum and a slope of not more than 20 degrees. After site inspection, a formal agreement between is entered into between the landholder and DNR. DNR accepts full responsibility and all the costs for the establishment and maintenance of the plantation for 18 months after the planting, after which the landholder assumes the ownership of and responsibility for the plantation.

A second example is a scheme promoted by DPI Forestry Section in South Australia, to establish Bluegum and Radiata pine in the south-east of that state. The scheme has received two Commonwealth grants, and planting targets are 2.4 m Bluegum and 800,000 Radiata pine by the end of 1998. The DPI offers planting, thinning and pruning advice and the opportunity to develop a management plan at no charge. In addition, landholders are given a 50% rebate on the cost of the seedlings. The maximum area to qualify for this rebate is 20 ha. The overall objective is to encourage enough plantations within the south-east of South Australia to warrant the establishment of a timber mill by a private investor.

The third example of state-based forestry is the Queensland Department of Primary Industries (QDPI) Tree Assistance Scheme which provides seedlings to landholders at concessional prices. Participation requires a farm plan, farm visit and management agreement. The fourth example is Queensland Department of Natural Resources placement of 10 extension officers who provide advice, assistance and education on the role of farm trees.

Local area schemes

Some forestry support programs are designed for particular local areas. An example is the federally funded Mary Valley and North Coast Farm Forestry Project, designed to engender a farm forestry culture and promote commercial planting within a particular river catchment in south-east Queensland.
COMPARISON OF THE FORESTRY ENVIRONMENTS IN THE UK AND AUSTRALIA

From the foregoing discussion, a number of distinctive differences may be noted with respect to reforestation in the UK and Australia, which could influence government support policies:

Motives for planting. Australia and the UK both import substantial quantities of timber, and import replacement has high priority in forestry support in both countries. Self-sufficiency rates are currently about 10% (by volume) in the UK and about 70%-80% in Australia. In both countries, the extent to which Crown forestry can be increased is limited and land acquisition expensive. In fact, the UK the Forestry Commission has been selling off land. Agricultural supply control and land diversion is an issue in the UK favouring private forestry, which does not arise in Australia, where greater emphasis is placed on land and water protection in Australia.

Current tree cover. Originally, tree cover as a percentage of land area would have been far hire in the UK than Australia, and the relative loss of trees has been much greater, particularly during war years. This has contributed to a higher priority being placed on reforestation in the UK.

Government and community emphasis on landscape amenity. Protection and enhancement of attractive rural landscapes has been major motive for support for private forestry in the UK. In some cases, broadleaved species are planted around the perimeter or along the road frontage of plantations, because these species are considered more visually attractive than conifers. Single species stands are generally not encouraged, but neither are “pyjama striped” mixed stands of conifers and broadleaved. The weight placed on landscape amenity in Australia has been lower and interest more recent; native tropical and sub-tropical rainforest are generally considered of greater scenic interest. State forest services have been defensive about the need to

“minimize the visual impact of forestry practices. Among measures for reducing the visual impact of forestry operations are modification of coupe size and shape, deliberate location of harvesting operations so as to take advantage of the screening effects of topography and vegetation, and dispersion of forestry activities in time and space in order to spread impacts and create a mosaic of forest age classes” (RAC, 1992, p. 184).

Harrison et al. (1994) found that landholders regarded farm beautification as an important reason for planting, but this has not been an announced government objective.

Costs and revenues of reforestation. It is apparent that the costs of planting and establishing woodlots in the UK are typically higher than in Australia. In the UK, a cost of $6000/ha for small broadleaved farm woods planted as commercial timber would not be uncommon; in Australia a cost of $3000/ha would be more normal. An exception is restoration and riparian
plantings, where costs of $20,000 or more are not uncommon. Stumpage prices for farm forestry in Australia are typically of the order of $30 to $50/m³ (Herbohn et al., 1996). This is not much lower than prices at clear felling for standing conifers sold by the UK Forestry Commission in the year to March 1997 or $40 to $80/m³ (Nix, 1997).

Growth rates and harvest ages. A harvest age of at least 50 years would be expected for most timber species in the UK, poplars being an exception. Herbohn et al. (1997) report Delphi survey estimates of MAI and harvest age for about 30 widely grown timber species in north Queensland, most of which are less than 50 years and some less than 30 years.

Groups most interested in planting trees. In the UK, the recent trend has been for landholders with relatively large properties to plant on lowland areas. In fact, the size structure is bi-modal with small farms also planting woods but as in Australia they tend to be people with non-farm sources of income. The people who are less likely to plant are those on medium sized family farms where the opportunity cost is too high and where maintaining cash income takes priority over amenity benefits. In Australia, planting has been confined largely to the coastal wetter areas, and landholders with small and non-commercial properties have been prominent in planting (Harrison and Sharma, 1995). The minimum area requirements in joint venture programs (typically 10 to 20 ha) have encouraged planting on larger holdings and on council land.

Choice of species and trends in choice. The increasing interest in broadleaved species in the UK is notable; this was in fact contrary to original expectations when it was thought farmers would be primarily motivated by profit and favour conifers. In Australia, in recent years there has been a strong movement towards native timber species. For example, in a survey in south-east Queensland, Harrison et al. (1994) found virtually no exotics had been planted recently. Native species widely planted include some which are conifers (e.g. Hoop and Kauri Pine) and other narrow-leaved species, e.g. Acacias, southern Silky Oak. While patriotic feelings support growing native species in the UK, they are not as dominating a factor as in Australia. In the UK, attractive species from Europe and elsewhere have been adopted as traditional species. However, it is notable that a high rate of planting grant is provided for native pinewoods, which accounted for 24% of all new plantings in 1996-97 - a substantial increase on the previous year (Forestry Commission, 1997a,b). It is also the case that lower planting densities may be acceptable for native woodlands than would otherwise be the case.

Variety of species planted. The number of species being planted in Australia, particularly in the Wet Tropics, is greater than that in the UK. A list of about 150 species was chosen in the CRRP in north Queensland, and about 30 of these have been widely used.

Emphasis on riparian plantings. Land degradation is regarded as a major environmental problem in Australia, and a major emphasis is placed on riparian revegetation. In the UK, stabilisation of riparian areas has in general been already achieved.

Harvest rights and restocking requirements. Lack of certainty as to whether logging will be allowed (sovereign risk) has been identified as a major impediment to farm forestry in
Australia (e.g. Harrison et al., 1996). When trees are harvested, there is no requirement to replant. In the UK, harvest is more assured, but there is usually a restocking requirement.

Taxation treatment of forestry. Taxation concessions were a major incentive for tree planting in the UK up to 1988, associated with a marginal tax rate of up to 83 pence in the pound. These concessions were particularly attractive to very high income business and media personalities, and the equity of this form of support was questionable. In consequence, most forestry expenditure and income has been moved outside the taxation net. In Australia, forestry income from plantations is taxable, and some of the expenditure is deductible from income for taxation purposes, while some is regarded as capital expenditure, and there is considerable uncertainty as to tax treatment.

Equity investment opportunities in forest companies. In the UK (as in New Zealand), alternative opportunities exist for equity investment in forest companies; such schemes are not widespread in Australia.

Prevalence of forestry cooperatives and specialist consultants. Forestry cooperatives have been established in some parts of Britain, and offer a range of services to members, from arranging specific contracting services for individual growers through to complete management services including timber marketing. Forestry consultancy services are also well developed, with two companies responsible for managing a total of 270,000 ha on behalf of clients. In Australia, these services are still in their infancy.

Corporatisation and privatisation of government plantations. While both the UK and Australia have been undertaking considerable privatisation of government owned enterprises, unlike New Zealand both have been loath to privatise their forest assets. Since these assets are in a production cycle, there is little doubt that they would be saleable. Loss of public recreation opportunities in the UK and indigenous land right claims in Australia have probably contributed to such caution. Forest privatisation in New Zealand has been associated with considerable investor interest in the industry, including rapid expansion of farm forestry.

Stance of the environmental movement. In the UK, there has been community opposition to upland planting, on landscape and conservation grounds. In Australia, the green movement has vigorously opposed logging of native forest and in particular rainforest, but has in general supported reforestation on the grounds that this will reduce logging pressure on native forests.

COMPARISON BETWEEN SUPPORT PROGRAMS IN THE UK AND AUSTRALIA

In terms of similarities and differences between support programs in both countries, a number of observations may be made:

Choice and variety of support instruments. The UK has relied heavily on planting and maintenance grants. Despite the fact there are only two grant aid schemes, the various supplements and priority targets make them quite complex. In Australia, a myriad system of
support measures has been adopted, associated with the range of climates and the
decentralisation of forest policy over federal, state and territory, and local governments.
Grants such as those through the National Heritage Trust have been directed to community
groups rather than individual landholders, for riparian rather than production plantings. Direct
financial assistance to individual landholders has generally been low, the CRRP being an
exception. Plantation joint venture schemes where government or private companies take an
equity share have become a major focus. Considerable emphasis has been placed on forestry
extension services.

Targeting of support. This appears common in both countries. There is targeting in the UK
by land type (better versus poorer), location (promimity to towns) and species planted
(broadleaf versus conifers), in terms of payment levels offered. Australian programs have
increasingly favoured native species. Programs such as joint venture schemes and the CRRP
have minimum area requirements so as to achieve some economies of scale, and have lists of
acceptable species.

Frequency of change in support measures. This would have to be regarded a quite rapid in
both countries, suggesting indifferent success in terms of policy objectives, experimentation
with policy instruments, and continuing efforts to target particular areas and species types.

Duration of assistance measures. A notable feature in the UK is that grants are paid for up to
15 years from planting of a woodlot. In Australian schemes where the government does not
assume an equity, support is typically short term. An example is the CRRP in which planting
and establishment support has run for approximately three years.

Extent of public sector equity. Governments assume an equity of up to 80% of plantations on
private land in some of the joint venture schemes in Australia. None of the UK schemes
allow for government equity. However, the public interest is taken into account in
arrangements whereby funding is provided on terms that require granting public access and
where felling controls limit the rights of a individual to clear land.

Assistance for facilitating recreation. This is an explicit provision in UK grant schemes,
although public access to woodland established with grant aid is seldom insisted upon unless
the land owner has claimed the Community Woodland supplement. It is not a feature of
Australian schemes

Planting achievements. The total area of Crown plantations in the UK (844,000 ha) and in
Australia (770,000 ha) are similar. However, the area on private plantations in Australia of
about 55,000 ha in aggregate is small compared with the UK, where about 15,000 ha per year
has been planted over the last 30 years. In that the Australian joint venture schemes are
relatively new, it is not clear whether they will be widely adopted and lead to accelerated
planting, nor whether governments will maintain a financial commitment to these programs.
It is probable that joint ventures with private industry will continue to concentrate on short-
rotation woodchip production.
Success in increasing awareness about assistance measures. Certainly, UK farmers have become more prepared to think about woodland as a possible enterprise, although survey findings indicate that relatively few know what grants are available. Similarly, awareness of the various planting assistance measures among Australian farmers probably is low.

Difficulties experienced and attitudes to assistance programs. Survey work in the UK detected some dissatisfaction with support programs, e.g. that the grant schemes should be less bureaucratic (30% of participants), there should be less delay in obtaining grant approval (17%), and there should be less delay in obtaining payments (5%). Australian schemes also have faced some criticism. For example, some reservations have been expressed about plantation joint venture schemes, for example with respect to valuation of land for rent imputation, limited choice of species and requirement to clear existing vegetation, but in general these schemes seem to have been well received.

Emphasis on environmental benefits. This has been particularly strong in the UK, for which it is asserted that the two main aims of forestry policy are the sustainable management of existing woods and forests, and a steady expansion of tree cover to increase the many, diverse benefits that forests provide (Forestry Commission, 1991). Specifically, benefits identified include: opportunities for recreation and public access; landscape amenity; habitat for wildlife; timber production; and carbon sequestration. These benefits are elaborated by the Forestry Commission (1994) in Sustainable forestry - the UK Programme. Also the application pack for the Woodland Grant scheme contains a paper ‘The Forest Environment’ which sets out the environmental standards that must be met. In Australia, there seems to have been greater emphasis on dominant use forestry, with clear differentiation between production and environmental (especially riparian) plantings.

LESSONS WHICH CAN BE LEARNED FOR POLICY PURPOSES

What policy implications can be drawn from the preceding discussion? It would appear that neither country has been able to devise a low-cost but effective program to bring about a high level of tree planting on private land. Whether such program is possible remains an open question, although the success of farm forestry in New Zealand suggests it may be. In spite of their other privatisation initiatives, neither the UK or Australia has been particularly adventurous in exposing forestry to market forces.

The UK as a more industrialised country probably places greater emphasis on landscape appearance. Although landscape quality has been rather taken more for granted in Australia, there has been strong concern over land degradation, and national programs such as Landcare and Greening Australia have aimed to change community attitudes.

It seems doubtful whether the joint venture schemes which now dominate in Australia could be transferred to the UK, for a number of reasons:

- Only large scale conifer forestry has the potential to be economically viable in the UK but not without substantial Government support. This is partly because rotation intervals are likely to be 50 years as a minimum.
• Broadleaves are more in keeping with the natural tree cover of the lowlands but the slow growth rates (80 or more years, and perhaps 120 for oak) mean that they are just not viable given high land values and supported agriculture as the alternative landuse. Also establishment costs are higher for forestry than crops, due to fencing and tree protection requirements. Without large grants to level the playing field, tree farming is not an attractive land use. In commercial timber production, conifers are the best proposition, but in the lowlands even with the benefits of grant aid they fail to match the returns from farming. Where tree planting is for amenity purposes and the normal planting desires are reduced as well as a more relaxed approach taken towards tree protection, broadleaves become more competitive with conifers providing all the grants are harvested, but again are unlikely to match the returns from cropping.

• On average farmers who were planting trees under the 'old' farm woodland scheme were subsidising the woodland to the tune of £200/ha/yr over the first 10 years of its life. This was based on the opportunity cost of not undertaking arable cropping. Under the new farm woodland premium scheme the grants are more front-end-loaded and the woodland can count towards set-aside requirements thereby reducing the opportunity cost. Even so, broadleaves are unlikely to compete financially with cropping. It is unlikely that any joint venture scheme could replace grants and offer prospects of a positive return. An exception to this rule is private joint venture schemes involving fast growing poplar species that can be harvested in 25 years. This scheme does look like it could be viable, at least given some grant aid.

What is really expected of farm woodland in lowland UK is landscape benefits, habitat creation and some recreational opportunities (but most landowners don't offer access unless they take the community woodland supplement). Also it is an alternative to producing yet more farm produce that has to be disposed of at considerable public expense.

Some financial assistance is provided for tree planting in Australia, but at a much lower level and for a shorter term than the UK woodland grants. Some exceptions have arisen, such as the Community Rainforest Reforestation Program where planting costs of up to $9000/ha were met fully by government. However, this was a particularly high-cost form of planting which involved a labour training scheme. Levels of grants to entice planting in Australia would probably be somewhat lower than those in the UK, due to lower planting and establishment costs and the shorter rotation lengths. In this regard, Harrison et al. (1996) found that 69% of landholders in a south-east Queensland survey indicated they would commence or increase tree planting if 50% of planting and establishment costs were met. The high levels of farm forestry grants of the UK would not be supported in Australia, where there is less emphasis on agricultural supply control and on landscape amenity values of forestry. It is notable, however, that a system of planting grants is currently being considered in Queensland (Halpin, 1998).

Inequitable outcomes of taxation concessions for forestry as arose in the UK do not appear to be a concern in Australia, perhaps due to lower marginal tax rates rather than targeting of tax concessions per se.
CONCLUDING COMMENTS

The UK and Australia have strong grounds for promoting private including farm forestry, for environmental and landscape benefits as well as timber production. However, the assistance measures adopted appear to be quite different. The extensive deforestation during war years, higher UK timber import bill, importance placed on landscape (including for attracting tourism), and importance of agricultural supply control have led the UK to make greater effort and expenditure to promote farm and other private forestry than Australia. In consequence, a much larger area has been planted. A tightly focussed program with large tree planting and maintenance grants has been provided in the UK, whereas in Australia the level of assistance to landholders has generally been low. Even in case where generous assistance has been provided, the uptake has not been rapid.

In the UK, there has been a dramatic change from planting conifers to planting broadleaved species, assisted by the Farm Woodland Premium Scheme. Similarly, in Australia there has been a major swing from conifers to eucalypts and native cabinet species, due to environmental patriotism and realisation that these species would grow well in plantations. In both countries, government plantation areas have tended to plateau, with emphasis redirected to private forestry.

The high cost of the UK assistance program and relatively low planting rate in Australia suggest that it is extremely difficult if not impossible to devise cost-effective reforestation measures which lead to a high level of planting activity. While there may be some scope for transfer of incentive schemes between the UK and Australia, transfer seems to be limited by differences in circumstances between countries. It would appear that the joint venture arrangements now being favoured in Australia would not be successful in the UK. Given the significant Australian expenditure on timber imports, some form of woodland grant may be appropriate, though at a lower level due to the lower establishment costs and shorter rotations. Perhaps because of the large areas of protected forests in National Parks and World Heritage Areas, Australian governments would appear unwilling to provide grant funding.

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