

**Victorian Timber Industry
- Plantations: A Hardwood Industry Perspective -**

**Report prepared for
Victorian Association of Forest Industries**

**By
Hamish Crawford
Cailum Pty Ltd**

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Are plantations a substitute for timber from native forests?

The contention – our plantation resource is big enough now to totally replace wood from native forests

It has been suggested that Australia's plantation resource is now of sufficient size to effectively replace timber production from native forests, so native forests can be set aside in conservation reserves without adversely impacting Australia's timber-using industries. This contention is based on the premise that wood sourced from Australia's expanding plantation resource could directly replace wood from native forests and that the volume now available from plantations is sufficient to supply all of Australia's needs. In fact, despite record plantation log production, several factors cast doubt on this contention.

Rapidly expanding log production from plantations has not reduced the trade deficit in wood products

Australian trade in forest products is at record levels; imports are up, exports are up and the deficit remains at historically high levels. Forest growers are focusing increasingly on developing export markets for their products, whether it comes from plantations or native forests. Trade data demonstrate that consumers are just as happy buying imported wood products as those from local forests. Analyses based simply on comparisons between domestic log supply and domestic log consumption are essentially meaningless in an increasingly trade dominated industry. This is exemplified by the fact that record production levels from plantations have not reduced Australia's annual \$2 billion trade deficit in wood products.

Australia imports significant quantities of hardwoods from tropical forests in Asia – a direct competitor for native hardwoods

Every year, Australia imports over \$0.5 billion in wood products, mostly tropical hardwoods, from Indonesia and Malaysia; countries where illegal logging is rife (estimated at 75% and 35% of total harvest respectively) and regulatory and forest management systems are grossly inadequate by Australian standards. Of all Australian produced wood, these tropical hardwood imports compete most with native forest hardwoods, particularly in appearance grade and durables markets.

Victorians have offset falling supplies of native sawlogs with timber from tropical forests in Asia-Pacific

In Victoria, hardwood sawlog production has halved since the 1950s. Since that time, the area of native forest available for timber production has fallen by more than two-thirds as increasing areas are added to the conservation reserve system. Since the mid 1990s, imports of tropical hardwood sawnwood into Victoria have increased by over 75%. Victorians now consumes, in sawnwood products alone, the annual equivalent of over 100,000 m³ of sawlogs sourced from tropical forests in Asia and the South Pacific.

Theme 1

Theme 2

Theme 3

Are plantations a substitute for timber from native forests?

Sawlogs from hardwood plantations are not the answer

While the area of hardwood plantations has expanded rapidly in recent years, only a small proportion of these plantations could potentially supply sawlogs to the Australian market, particularly in Victoria, where only around 14,000 ha (<9%) of hardwood plantations are managed for sawlog production. Studies have shown that unless plantations are thinned and pruned, they will not produce sawlogs commercially. Estimates of sawlog availability over the next 40 years from Victoria's existing hardwood plantations show production levels below what Victorians currently import from tropical forests. Also, species used so far in hardwood plantations are unsuitable for 'durable' applications, to which many native forest and imported hardwoods are especially suited. There is added concern in some areas that as (sawlog managed) hardwood plantations approach harvest age and take on higher biodiversity values, forest growers may lose the "right to harvest", further impacting future sawlog availability.

Theme 4

Without public investment driving plantations, they are a much less effective tool of public policy

Australia's plantation resources, long a bastion of public ownership and, as such, a key instrument of public policy, have changed irrevocably. There are now over 1.7 million ha of plantations in Australia. While 58% are softwood, since 1994 softwood plantations have accounted for only 10% of new areas established. New establishment has been dominated by private investment; managed investment scheme companies (63% of total investment) establishing short rotation hardwoods (78% of all new plantations) – that is, retail investors investing funds for a fixed period of time (generally 10-15 years) to produce a fixed product (pulpwood) for known (export) markets. Over 99% of Victoria's plantations (hardwood and softwood) are now privately owned. With the taxation system being the main tool of public policy influencing plantations, the capacity of governments to create and influence domestic timber markets to achieve particular policy objectives is minimal.

Theme 5

Continued plantation expansion is not a given

Up until 2000, the annual rate of plantation expansion continued to grow, fuelling ambitious forecasts of future expansion, such as those produced by BRS in 2001. Actual planting rates in the period 2001-2004 have been at the lower end of long term projections. Continued expansion of Australia's plantation estate, particularly for sawlog production, could well be constrained by a number of factors, including:

- The prospect of less attractive tax provisions, given federal government notice of a sunset clause to the current regime,
- Investor preference for short term over long term investments; this may influence take-up of hardwood sawlog opportunities,
- The difficulty in assigning a market value to environmental services from plantations, particularly in lower rainfall zones,
- The rising cost of suitable land in key plantation growing regions, as forestry companies and other land users compete,
- The shift in focus from raising capital for continued expansion to replanting of harvested areas of a maturing estate,
- The potential replanting of harvested softwood plantations with hardwoods as owners look for higher investment returns.

Theme 6

Are plantations a substitute for timber from native forests?

Of all land use industries, forestry leads the way in embracing sustainability

While environmental advocacy for forest ecosystems continues to focus on excluding timber production from native forests, significant advances are being made in sustainably managing forests to include timber production. The signing of the RFAs marked the beginning of a period of rapid and profound change in the way forests, both plantations and native forests, are managed in Australia. While the process is ongoing, separation of custodial and commercial responsibilities in public forest management, independent auditing of forest practices and third party accreditation of forest management systems have all advanced significantly over the last 5 years. In 2002, there were no Australian forest managers with sustainable forestry certification. By mid 2005, 12 have been certified under either FSC or AFS, of which 4 manage forests in Victoria. This could well double over the next 2 years. No other land use industry in Australia has embraced sustainability to the extent of forestry.

CONCLUSIONS

There is no question that Australia's plantation estate has grown significantly in recent years and has matured to the extent where the volume of logs produced from plantations now exceeds that from native forests.

The implications of this growth for the native forest and plantation industries is not clear. Despite record domestic production, imports and exports are surging, and Australia's long established trade deficit in wood and wood products continues unabated.

One trend, however, is clear. Harvests from Australia's native forests, particularly of sawlogs, are sharply declining. While there may not be common agreement on the cause of this reduction, the area of forest made available for timber production in favour of formal conservation reserves has also fallen significantly.

Another noticeable trend is the substantial increase in imports of hardwood products from tropical forests in Asia and the Pacific, regions notorious for illegal harvesting and sub-standard management systems. Again, while the reasons for this increase are not universally agreed, these imports are heavily weighted to appearance grade and durables products, markets traditionally the focus of native hardwood producers.

The potential for greater sawlog production from plantations appears limited given the relatively small area of hardwood plantations currently managed for sawlog production and the constraints facing continued plantation expansion.

All this has occurred at a time when forestry has made profound advances in sustainable and transparent management systems and now provides leadership to other land use industries.

It seems clear that an increasing plantation resource has not been able to offset the impacts of reduced production from native forests, especially in an increasingly trade-exposed timber market where imports, particularly of tropical hardwoods, are a key feature.

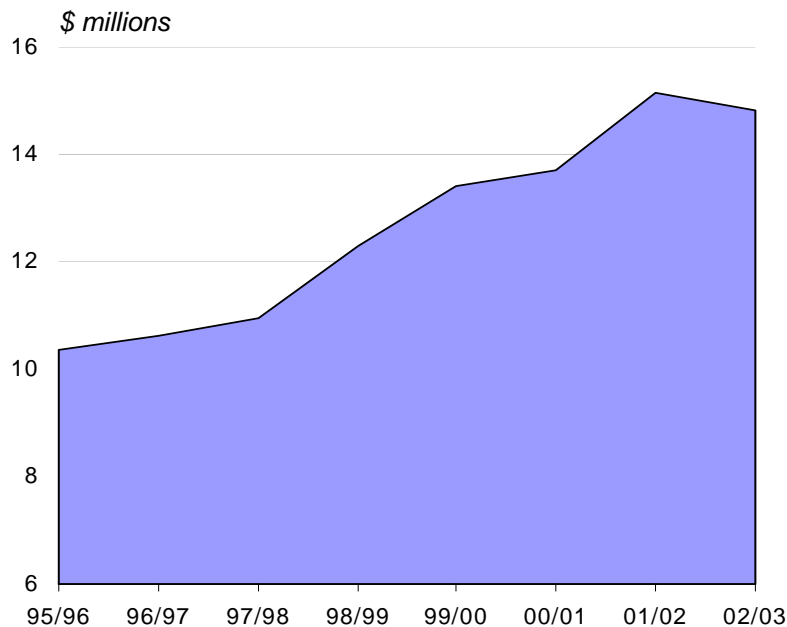
Theme 1 - Australia's trade deficit in forest and wood products continues

Despite a steady increase in the value of domestic log production, Australia's trade deficit in forest and wood products continues to run at historically high levels.

Since 1995/96, the gross value of log production from Australia's native and plantation forests has increased 47%. At the same time, annual exports have risen from 1.1 billion to \$2.1 billion (an increase of 97%) and imports from \$2.9 billion to \$3.9 billion (an increase of 33%). The deficit has remained essentially unchanged at \$1.85 billion.

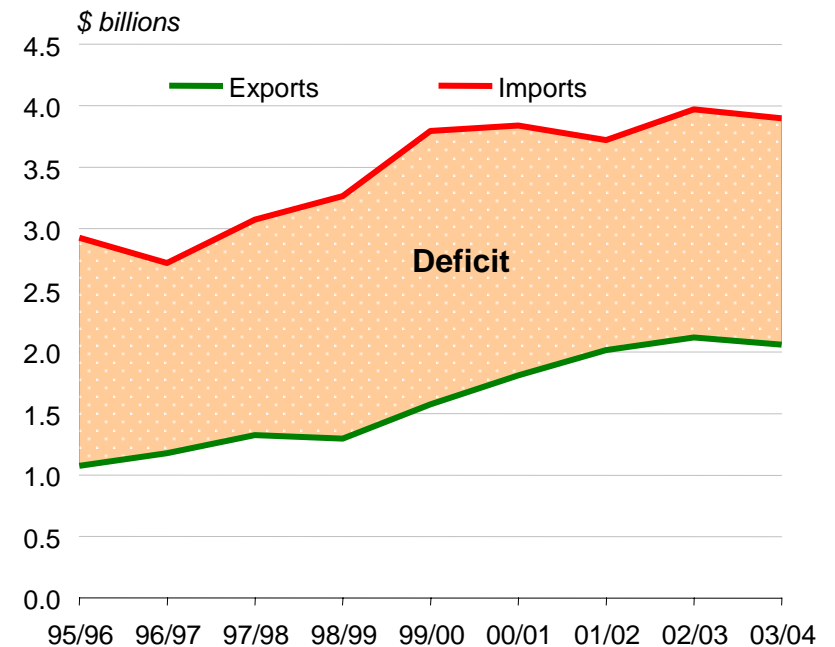
Australia's forest industry is increasingly participating in global markets. Domestic consumption scenarios must recognise the increasing role of both exports and imports. Australian consumers of forest and wood products are sourcing their needs from both locally produced and imported timber. Similarly, local timber producers, both hardwood and softwood, are increasingly seeking out export markets for their products.

Gross value of Australian log production has increased significantly



Source: ABARE

...but our wood products trade deficit continues



Source: ABARE

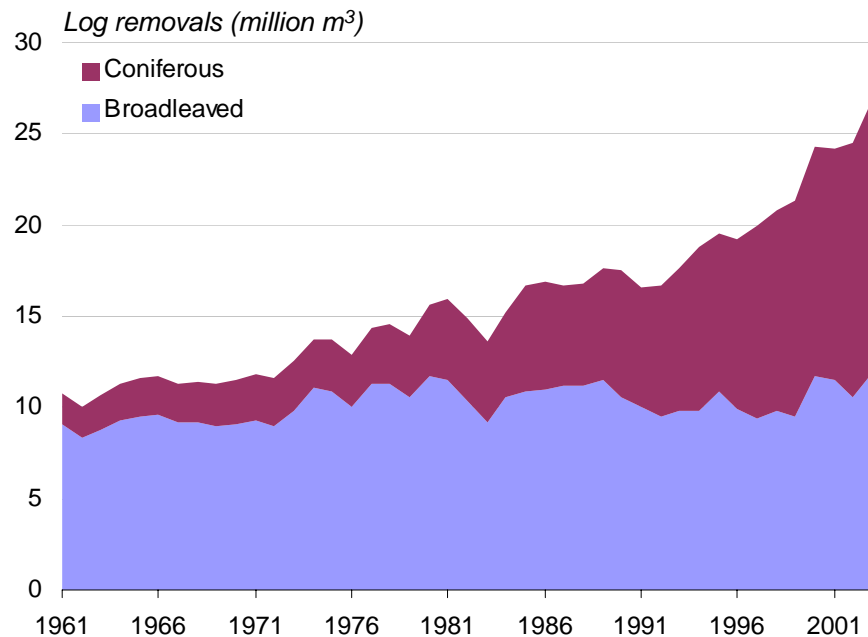
Theme 1 - Australian trends in log production

Gains in the value of log production are primarily a function of rapidly increasing log removals, particularly from Australia's maturing plantation resources.

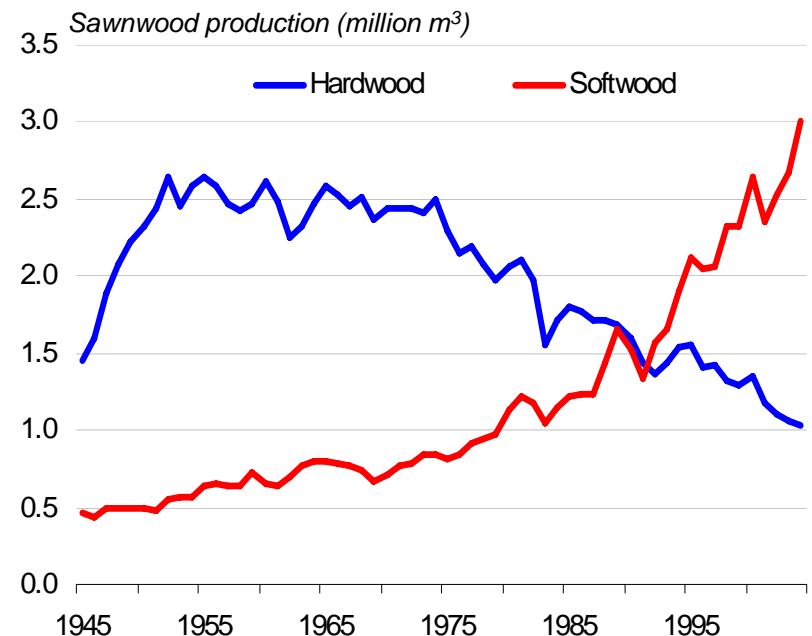
Increasing log removals reflect three significant trends:

- The maturing of Australia's softwood plantation resource, mostly established before the 1980s, principally by state government agencies using public funds.
- An expanding and maturing short rotation hardwood plantation resource, established using private sector capital invested to capitalise on export woodchip markets.
- Increasing utilisation, but declining overall log production from native forests.

Value of logs produced is up...



...while softwoods have displaced native hardwoods in sawnwood production



Source: ABARE

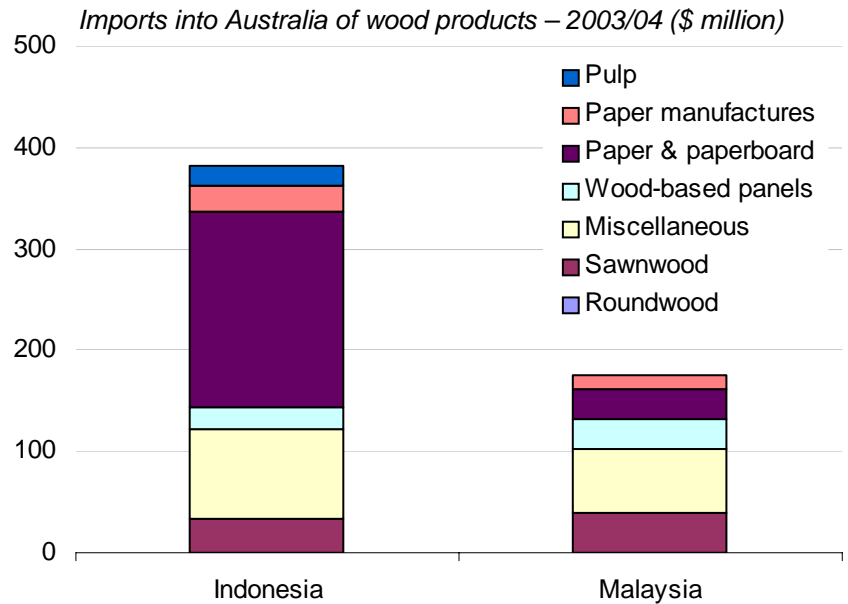
Source: ABARE

Theme 2 – Australia imports \$0.5 billion SE Asia wood products annually

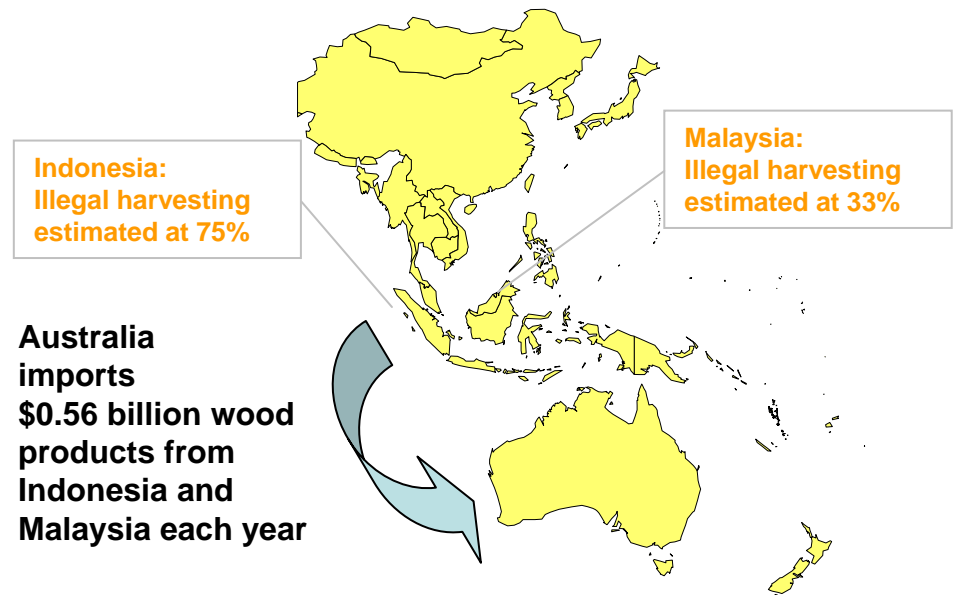
Australians readily import significant quantities of wood products from SE Asian countries known for illegal harvesting and poor environmental management.

In 2003/04, Australia imported over half a billion dollars (\$557 million) of wood products from Indonesia and Malaysia, largely derived from tropical hardwoods.

In countries where illegal harvesting is rife (estimated at 33% of total harvest in Malaysia and 75% in Indonesia), deforestation continues unabated and regulatory and forest management systems are deficient by western standards, Australians are increasingly sourcing a range of wood products, perhaps oblivious to the true environmental impacts of their decisions.



Source: ABARE



Source: Reported in Tacconi et al (2003)

Theme 3 – Decline in Victorian native forest sawlog production

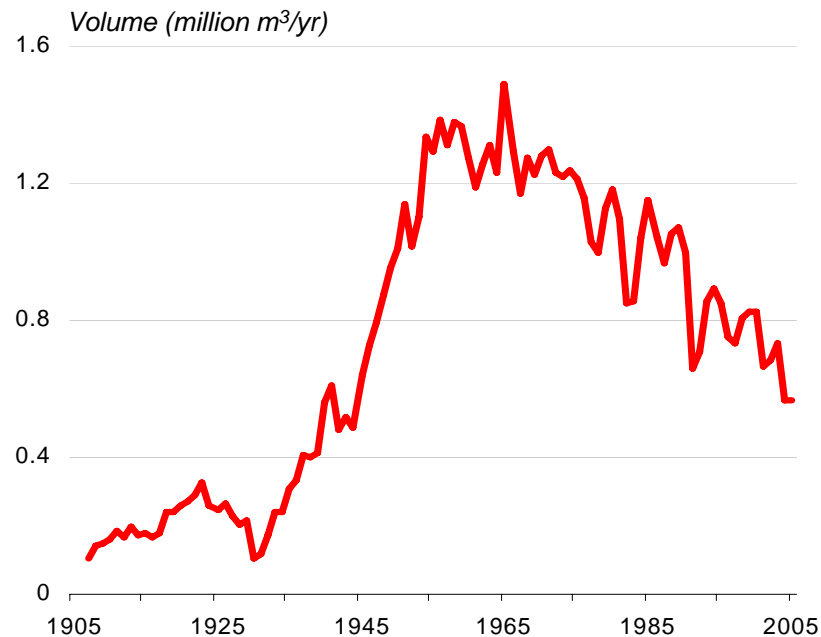
Sawlog production from Victoria’s native forests reached a peak during the 1950s, but has declined significantly at the same time as increasing areas of forest are removed from timber production and set aside in conservation reserves.

In the 1950s, at the height of Victorian native sawlog production, the area of state forests permanently reserved for forestry and timber reserves managed by forestry authorities was over 2.16 million hectares.

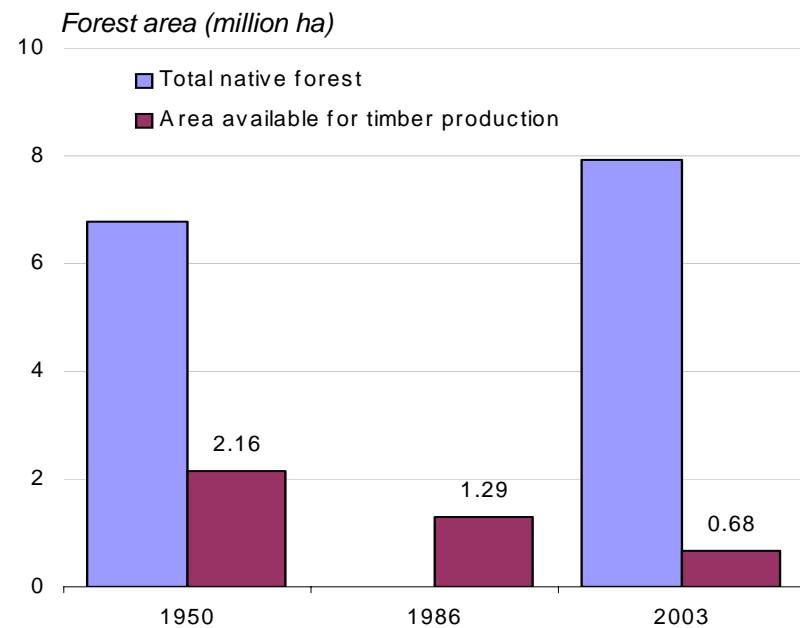
As areas of state forest have been progressively alienated from timber production, the area available has fallen dramatically. In 1986, the net area of productive state forest, after exclusion of buffer strips and wildlife corridors, was 1.29 million ha. By 2002, this had been reduced to 676,000 hectares.

Since the 1950s, sawlog production has halved....

.. while the net area open for timber production has fallen by two-thirds



Source: DSE



Sources: Forestry & Timber Bureau Annual Reports, OAG (1992), DNRE (2002)

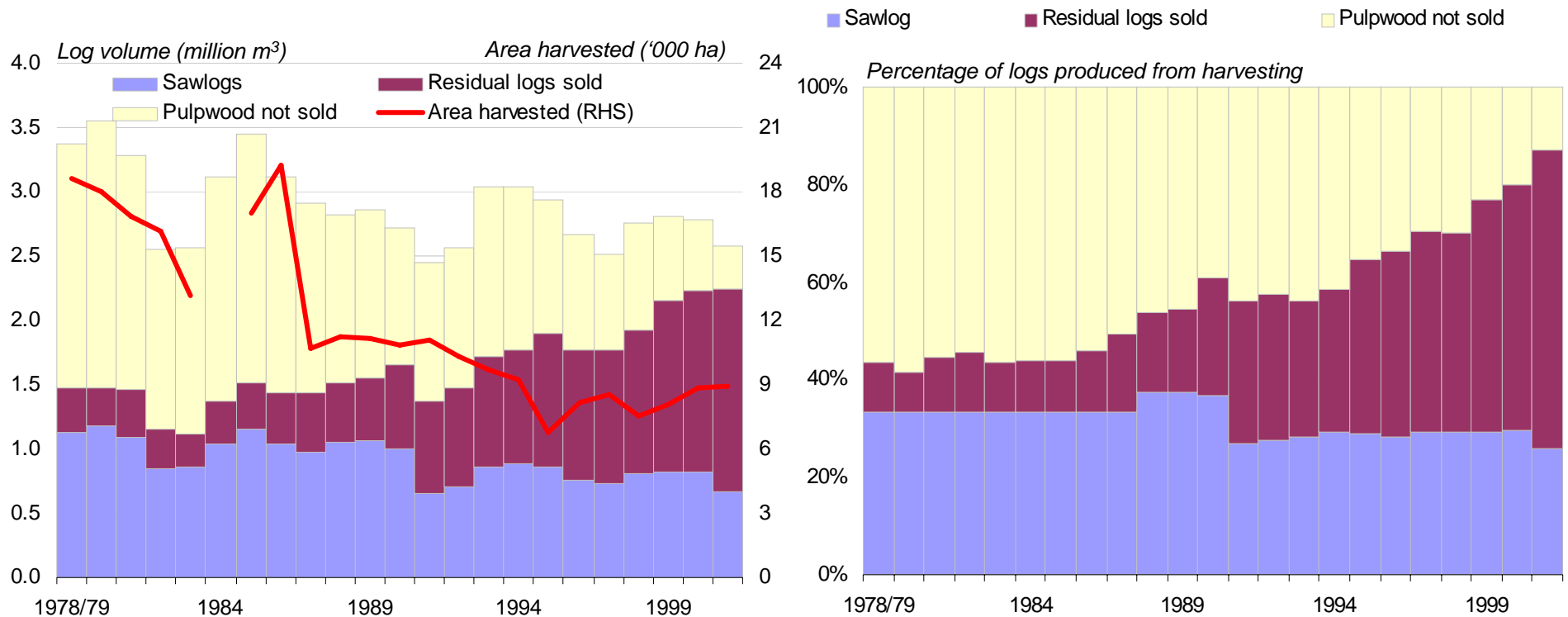
Theme 3 - Improved utilisation has partially offset reductions in harvesting

Reductions in the area available for timber production have been reflected in reductions in the area of public native forest harvested.

The area of public native forest harvested each year has halved since the mid 1970s from around 18,000 ha to around 9,000 ha.

Declining sawlog production has been partially offset by improved log utilisation of lower grade logs.

The proportion of pulpwood material produced during harvesting that is sold has increased significantly over the past 20 years. As new markets for pulpwood material have been developed, utilisation has increased from around 40% of potentially saleable logs in the early 1980s to over 80% today.



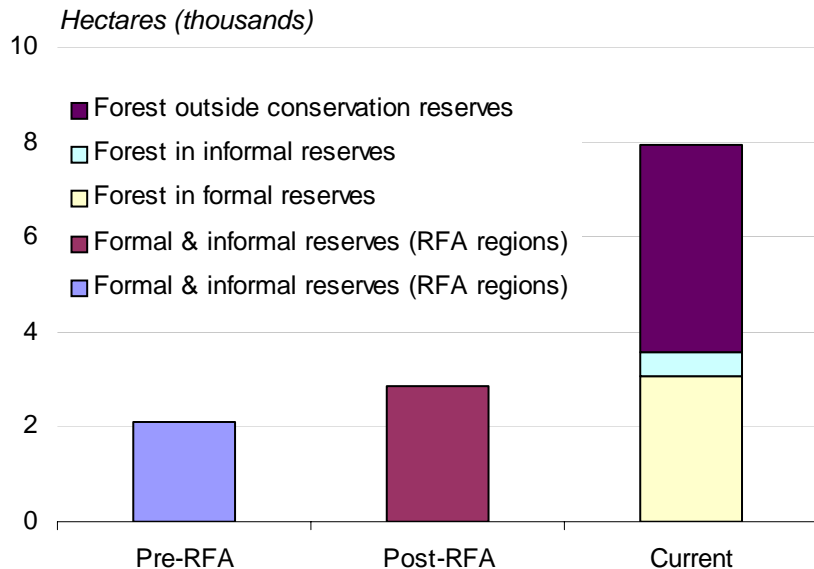
Sources: Annual Reports Forests Commission (1979-83), CFL to 1989, 1990-95 area data from regen treatments 96-2001 NRE unpublished data

Theme 3 - Forest reserves in Victoria have expanded significantly since the RFAs

Reductions in the area of Victorian forests available for timber production have occurred principally to expand the area of forest ecosystems protected in formal and informal reserves. These reserves now comprise 37% of Victorian forests, more than three times the IUCN benchmark of 10%.

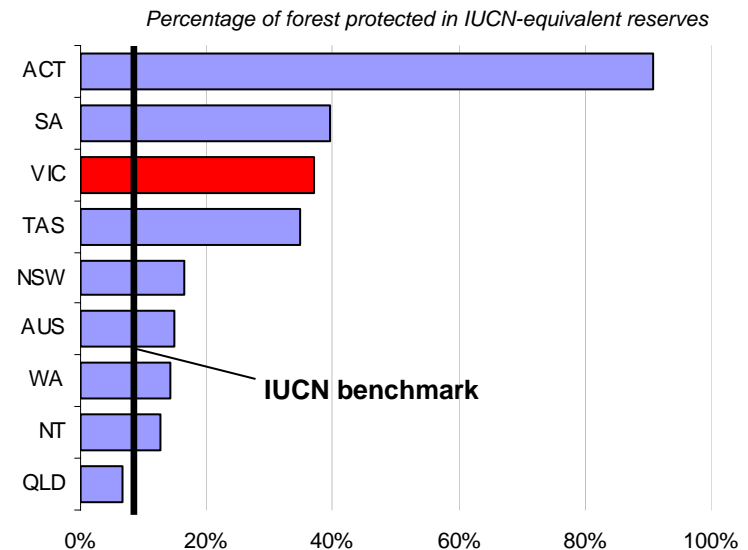
Prior to the Victorian regional forest agreements, the area of formal and informal reserves (all ecosystems within the RFA regions) was 2.114 million ha. Post RFAs, this increased to 2.876 million ha, an increase of 36%. Of Victoria's current 7.935 million ha of forest, 3.050 million ha are protected in formal reserves and 0.503 million ha in informal reserves, making a total of 3.553 million ha, or 37% of the total forest area. In Australia, in percentage terms, this is only exceeded by the Australian Capital Territory and South Australia. The IUCN benchmark of reserves (by forest type) is 10%.

Victorian reserves increased significantly post RFAs



Source: National Forest Inventory (2003)

Victoria well exceeds the IUCN reserves benchmark



Source: National Forest Inventory (2003)

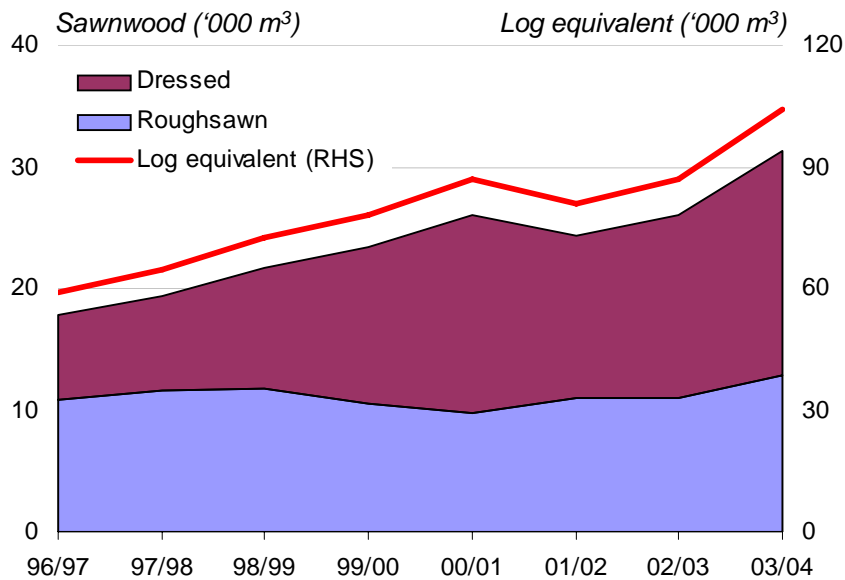
Theme 3 - Tropical hardwood sawnwood imports into Victoria are on the rise

Imports of tropical hardwood sawnwood into Victoria, principally from Indonesia and Malaysia, have been steadily increasing. They are now a significant component of the Victorian sawnwood market.

Imports of tropical hardwood sawntimber into Victoria have increased significantly in recent years, rising from 17,800 m³/yr in 1996/97 to 31,300 m³/yr in 2003/04, an increase of over 75%. Assuming a nominal log recovery of 30%, imports in 2003/04 were equivalent to around 104,000 m³ of sawlogs. This represents a significant component of the Victorian hardwood sawn timber market.

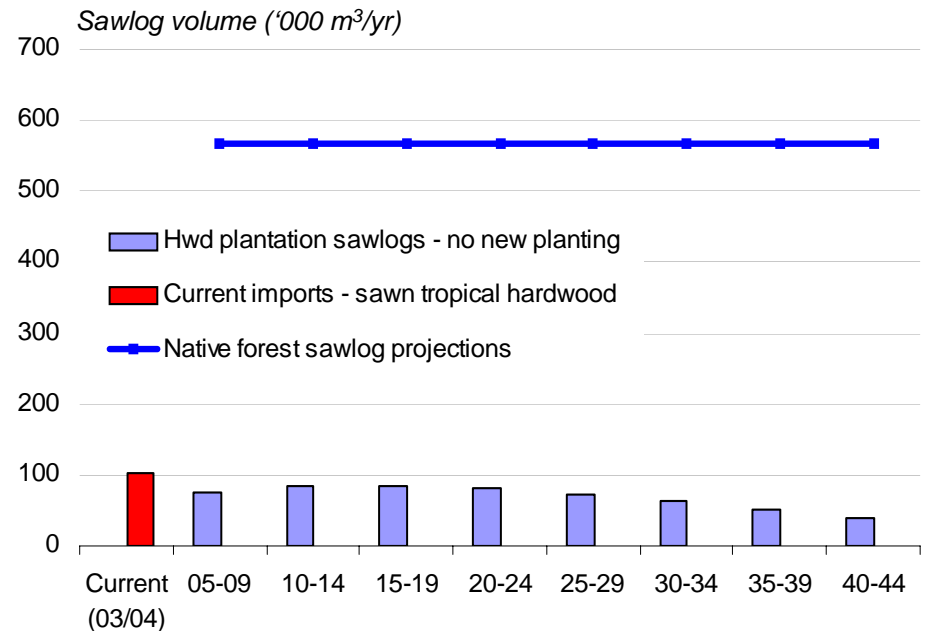
Future projections (BRS Medium) of plantation hardwood sawlog availability, if no new planting occurred, predict lower volumes of plantation sawlogs will be produced between now and 2044 than is currently imported into Victoria from tropical forests in SE Asia and the Pacific.

Tropical hardwood sawnwood imports are increasing



Sources: ABARE, log equivalent based on nominal recovery of 30%

...and will be a significant part of the future sawntimber market



Sources: ABARE, Ferguson et al (2002), Nolan et al (2005)

Theme 4 - Hardwood plantations are predominantly not managed for sawlogs

While the area of hardwood plantations has expanded rapidly in recent years, the proportion of plantations that could potentially supply hardwood sawlogs to the Australian market is actually quite small. This is especially so in Victoria.

Surveys conducted in the six key NPI regions that comprise over 90% of Australia's hardwood plantations have shown that only around 17.4% of hardwood plantations are being managed for sawlog production. The only areas within Victoria currently being managed for sawlog production are in Gippsland, with 13,916 ha.

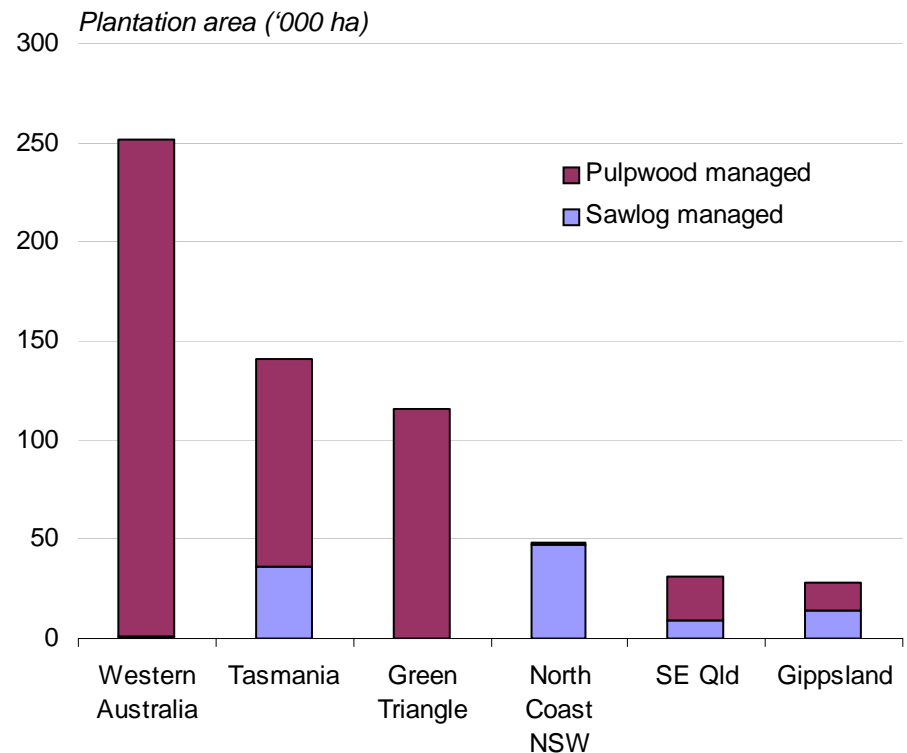
Nolan et al (2005) describe three broad silvicultural regimes under which Australian hardwood plantations are managed:

1. Unthinned and unpruned
2. Thinned and unpruned
3. Thinned and pruned

Only regimes 2 & 3 produce logs suitable for solid wood products. However, pruning is critical for producing clear wood capable of meeting high log grade specifications. In a trial on log grade recoveries in Gippsland, only 14% of logs from 32-yo late thinned but unpruned *E. globulus* stands could meet Victoria's D-grade sawlog specification. Also, species used so far in hardwood plantations are unsuitable for 'durable' applications, to which many native forest and imported hardwoods are especially suited.

Nolan's review found that "the vast majority of the current hardwood plantation estate will not produce logs suitable for a profitable solid wood products industry." The review also found that "unless more plantations managed for hardwood sawlogs are established in the near future, Australia will have to meet its demand for high quality hardwood appearance timber for building and furniture with increased imports."

Only 17% of hardwood plantations are managed for sawlogs



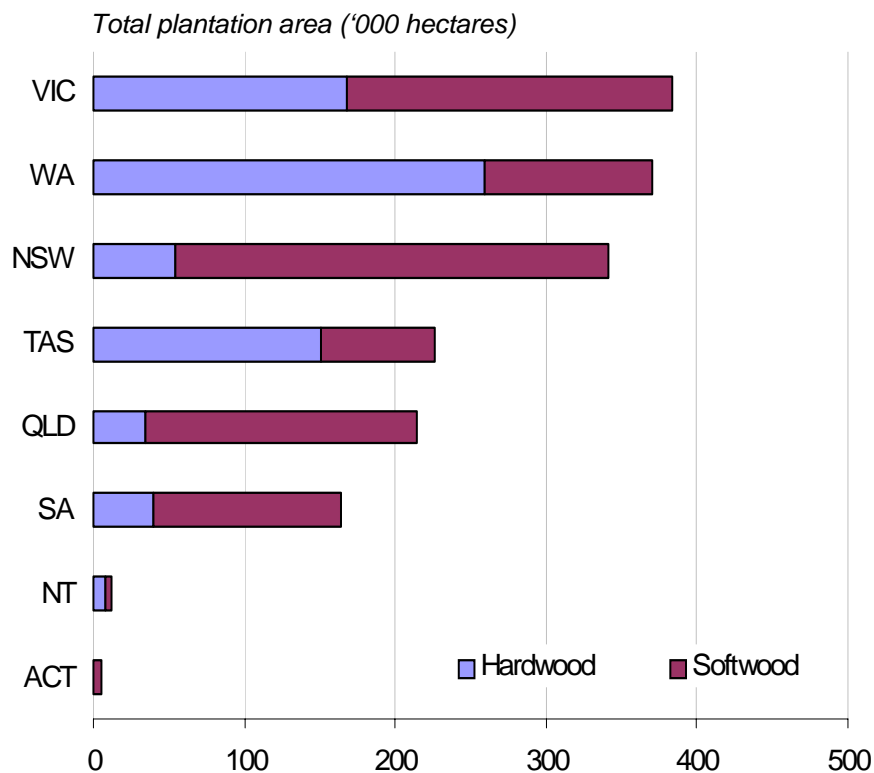
Source: Nolan et al (2005)

Theme 5 - The changing nature of Australia's plantation estate

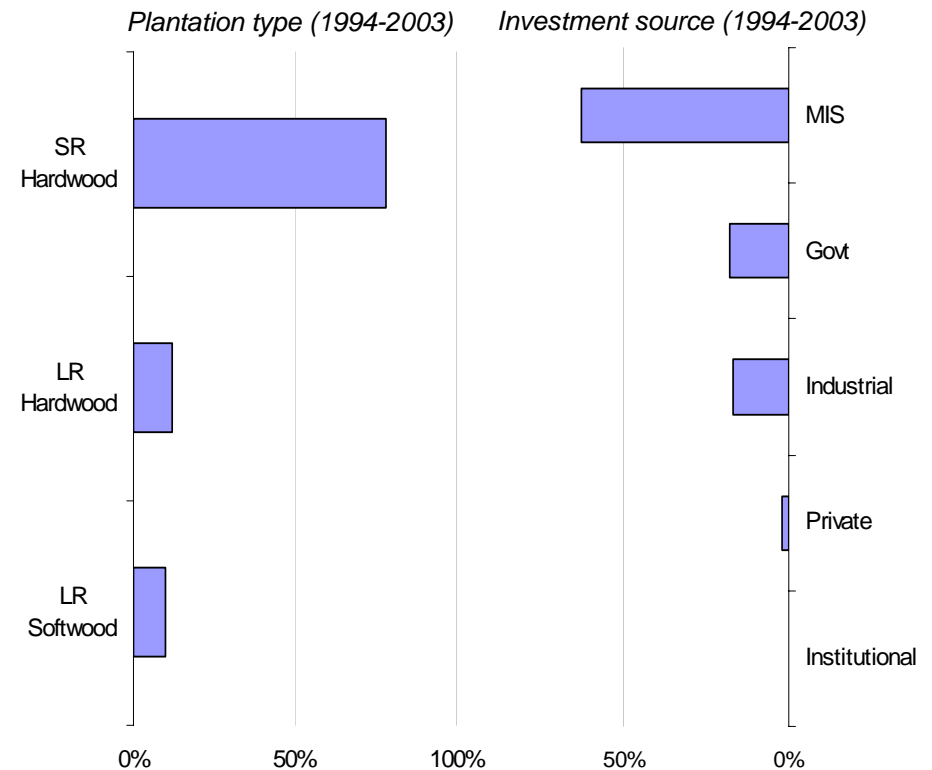
There are now over 1.7 million ha of plantations in Australia. While 58% are softwood, since 1994 softwood plantations have accounted for only 10% of new areas established.

Victoria has the largest plantation estate (22.3% of national total), with 214,874 ha of softwood plantations and 168,461 ha of hardwood. Over 99% of this is privately owned.

At a national level, the ownership and type of plantations has undergone a fundamental shift in recent years. In total, Australia's plantations are 58% long rotation softwoods and 36% of all plantations are in public ownership. Since 1994, however, new plantation establishment has been dominated by MIS companies (63% of all investment) establishing short rotation hardwoods (78% of all new plantations).



Source: National Plantation Inventory (2005)



Source: Kelly et al (2005)

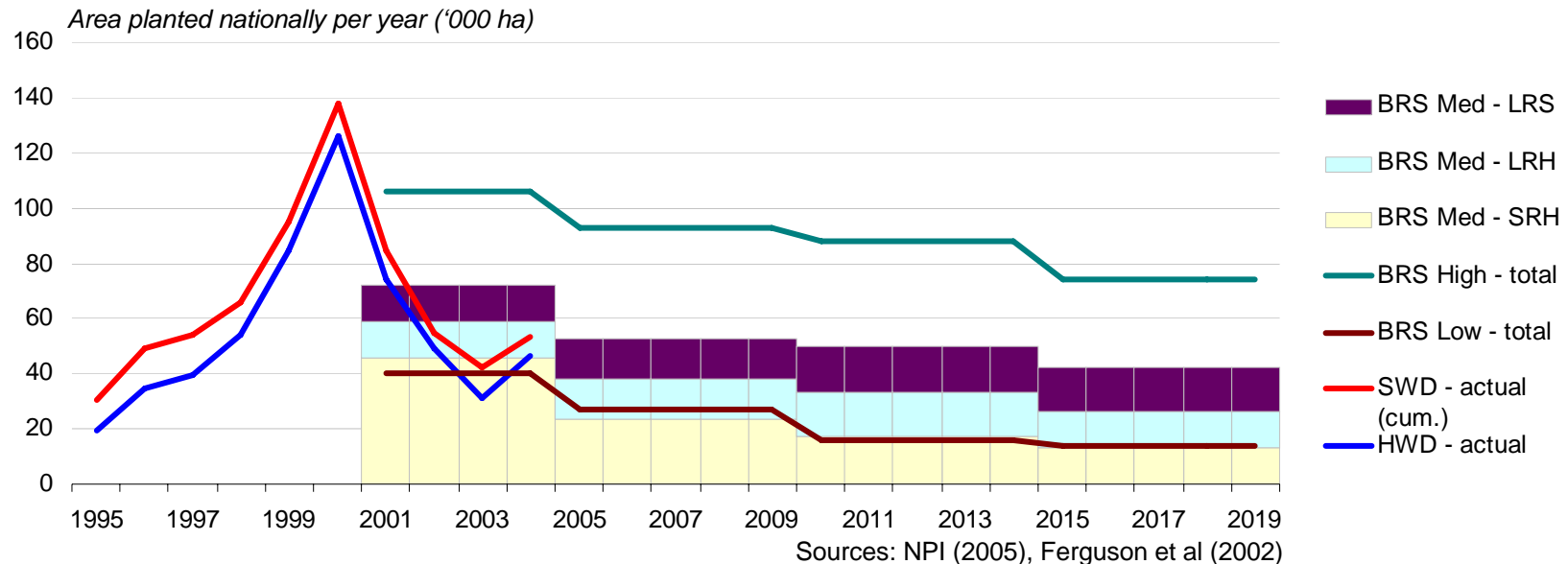
Theme 6 - Plantation expansion may not meet long-term forecasts

Up until 2000, the annual rate of plantation expansion continued to grow, fuelling ambitious forecasts of future expansion, such as those produced by BRS in 2001. Planting rates in the period 2001-2004 have been at the lower end of long term projections.

Plantation establishment rates have already been shown to be highly susceptible to changes in taxation treatment (as occurred in 2001). In 2001, Bureau of Rural Sciences made a series of new planting projections – High, Medium and Low. Within each of these scenarios, projections were made for short rotation hardwoods (SRH), long rotation hardwoods (LRH) and long rotation softwoods (LRS). Current planting rates are sitting between the Low and Medium BRS projections.

Further expansion of Australia's plantation estate will be influenced by a number of factors, including:

- The prospect for continuation of the current taxation regime, given notice by the federal government of sunset provisions,
- Investor preference for short term over long term investments; this may influence take-up of hardwood sawlog opportunities,
- The increasing cost of suitable land in key plantation growing regions, as forestry companies and other land users compete,
- The difficulty in assigning a market value to environmental services from plantations, particularly in lower rainfall zones,
- The shift in focus from raising capital for continued expansion to replanting of harvested areas of a maturing estate,
- The potential replanting of harvested softwood plantations with hardwoods as forest owners look for higher investment returns.



Theme 7 - Australian forest managers have embraced forest certification

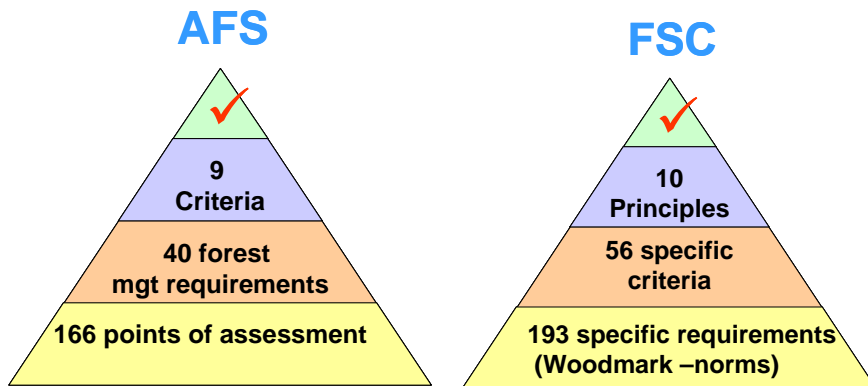
Since 2003, a number of forest managers have successfully obtained certification for sustainable forestry management.

Two certification schemes are active in Australia – the Forest Stewardship Council (FSC), founded in 1993, and the Australian Forestry Standard (AFS), founded in 2003. Both offer independent third party assessment of forest management systems.

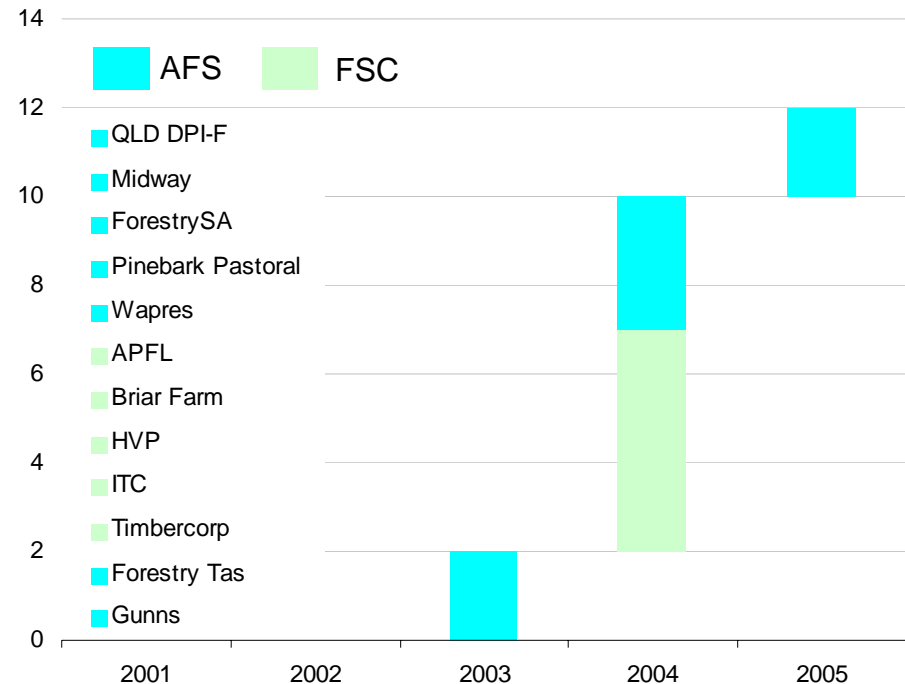
Since 2003, 12 Australian forest managers have achieved certification, involving native forest and plantations. This includes seven companies certified with Australian Forestry Standard and five with the Forest Stewardship Council. Four of these organisations – Timbercorp, Integrated Tree Cropping, Hancock Victorian Plantations and Midway – manage plantations within Victoria.

A number of other forest managers are currently in the advanced stages of certification assessment.

Both AFS and FSC offer comprehensive 3rd party assessment



Twelve managers now have sustainable forestry certification



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