SE2.5

WOOD AND WOOD PRODUCTS INDUSTRY BACKGROUND AND SITUATION ANALYSIS

QUEENSLAND CRA/RFA STEERING COMMITTEE

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FINAL REPORT

QDNR AND QDPI–FORESTRY

QUEENSLAND CRA/RFA STEERING COMMITTEE

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SUMMARY

This report has been prepared for the joint Commonwealth/State Steering Committee which oversees the Comprehensive Regional Assessment (CRA) of forests in the South East Queensland CRA region.

The Comprehensive Regional Assessment provides the scientific basis on which the State and Commonwealth governments will sign a Regional Forest Agreement (RFA) for the forests of the South-East Queensland (SEQ) CRA region. This agreement will determine the future of the region's forests, providing a balance between conservation and ecologically sustainable use of forest resources.

This report was undertaken to describe the background and current situation in the Queensland timber industry, especially the SEQ region.

The Commonwealth, State and Local governments each regulate the Queensland forest industry through various acts of legislation. Within this broad legislative framework, the Department of Primary Industries (DPI) Forestry is responsible for commercial operations on Queensland's publicly owned forest estate, while DNR manages the non-commercial aspects, in addition to being the custodial and regulatory agency. The Department of Environment and Heritage (DEH) is responsible for nature conservation on all tenure classes.

Around 58 per cent of the State's 49 million hectares of forest are under public ownership. DPI–Forestry is responsible for commercial operations on 4.7 million hectares, of which 180 000 hectares is plantation. In SEQ, the publicly owned State forests, timber reserves and other Crown land on which the State has the timber rights comprises some 1.04 million hectares. This includes 880 000 hectares of native forest and 160 000 hectares of plantation forest. Only about 338 000 hectares of the publicly owned native forest in SEQ is available for timber production. There are approximately 1.2 million hectares of private forest in SEQ.

Between the years 1993–94 and 1996–97, the public and private native and plantation forests of SEQ supplied 65 per cent (approximately 300 000 m^3 per annum) and 95 per cent (approximately 1 000 000 m^3 per annum) of Queensland's total hardwood (482 000 m^3) and plantation (1 050 000 m^3) sawlog harvests respectively. Within SEQ, private forests supply 60 per cent and publicly owned forests 40 per cent of the total hardwood sawlog cut. Private plantation timber comprises about 10 per cent of the total plantation sawlog harvest in SEQ. However, this will decline as the land is converted to other uses and because there have been no significant new plantings.

There are about 120 timber industry primary processors in SEQ. These include a medium density fibreboard and four plywood plants which contribute to the State's exports of forest products.

Employment in the Queensland timber industry is estimated to be around 10 747, and the primary and secondary processors together contribute about four per cent ($370 million) of Queensland's total manufacturing industry gross product. SEQ is the socio-economic hub of the Queensland forest industry, accounting for nearly 78 per cent (8 420 persons) of total direct industry employment. This includes 4 736 from SEQ's secondary processing sector. Sawmills in SEQ employ approximately 2 235 persons, of which 510 process the publicly owned hardwood removals from SEQ forests.

1.0 INTRODUCTION

1.1 BACKGROUND

Forests in Queensland have been continuously exploited since European settlement for building materials, to make room for agricultural pursuits and for urban expansion. In Queensland today, the management of the State's forests is an emotive issue. An important outcome of the SEQ RFA is to allocate forests within specified areas to a range of uses based on sound research and information. The intention of this report is to provide background information on the timber industry in SEQ and, in the process, facilitate a more informed decision making process.

1.2 PROJECT OBJECTIVES

The objective of the report is to describe the background and current situation in the Queensland timber industry, especially the SEQ region.

1.3 PROJECT SPECIFICATIONS

The project specifications are presented in appendix 1.1.

1.4 PROJECT DEFINITIONS

Wood and Wood Products Industry/Timber Industry/Forest Industry
For the purposes of this report, the timber industry encompasses all activities involved in the growing and subsequent value adding of Queensland timber, from management and harvesting through to primary and secondary processing.

SEQ/SEQ RFA region
This refers to the South East Queensland (SEQ) Regional Forest Agreement (RFA) region. With the exception of a few amendments, which have become necessary in the light of more detailed information, SEQ is equivalent to the South East Queensland biogeographic region, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA) (Thackway and Cresswell 1994). Bioregions were first defined across Queensland in 1974. Bioregion boundaries in Queensland are reviewed from time to time as better data with which to refine boundaries becomes available.

SEQ does not follow existing administrative or statistical boundaries, rather the region has been defined on the basis of patterns in geology, landform, climate and vegetation. South East Queensland is bounded by the Brigalow Belt bioregion and there is a substantial overlap in biodiveristy between the two regions. Where the gradient of the assessable environmental attributes is broad, the regional boundary is difficult to delineate, forcing reliance on major geological discontinuities. In other areas, such as Main Range, Bunya Mountains and Kroombit Tops,

environmental gradients, such as climate, are much sharper, which better facilitates boundary placement.

In terms of timber production, the region can be defined in terms of the Department of Primary Industries (DPI) Forestry Districts. The Beerburrum, Imbil and Maryborough Forestry Districts are entirely within SEQ, however, those in Monto and Yarraman are roughly 50 per cent and 80 per cent within the boundary respectively (refer to map 1). A small proportion of the Dalby and Rockhampton (including the Blackdown Tablelands) Forestry Districts are also within the SEQ region. According to DPI–Forestry, production from that part of the Dalby Forestry District within SEQ is negligible. The relatively small area of State Forest in the Blackdown Tablelands and other parts of the Rockhampton Forestry District within SEQ (approximately 10 000 hectares of publicly owned native forest) was not included in this report. This is due to there being a moratorium on logging in the Blackdown Tablelands since 1995, pending the completion of a conservation plan for Blackdown Stringybark. However, five sawmills within the Rockhampton Forestry District have been included as sawmills of SEQ because they draw on timber from the region.

Australian Bureau of Statistics (ABS) statistical boundaries were used to approximate employment and industry gross product (IGP) data for SEQ. In statistical boundary terms, SEQ includes all of the Brisbane and Moreton Statistical Divisions (SD), about half of the Wide Bay–Burnett SD, and a small fraction of the Fitzroy and Darling Downs SDs (refer to map 1). The latter three SDs include very large areas that lie outside SEQ. ABS employment and IGP data for these SDs were disagregated to the smaller Statistical Local Areas (SLAs) to achieve a fit as close as possible to the RFA boundary. Further detail is provided with the presentation of the data in chapter 6.

Forest

This report follows the National Forestry Policy Statement (NFPS) (1992) definition of forest. That is, an area dominated by trees, usually with a single stem, a mature or potentially mature stand height exceeding five metres, and with existing or potential projected cover of overstorey strata about equal to or greater than 30 per cent. This definition is sufficiently broad to encompass areas of trees that are sometimes described as woodlands.

Native Forest

Native forest is defined by the NFPS as any local indigenous community the dominant species of which are trees and containing throughout its growth the complement of native species and habitats normally associated with that forest type or having the potential to develop these characteristics. It includes forests with these characteristics that have been regenerated with human assistance following disturbance. It excludes plantations of native species and previously logged native forest that has been regenerated with non endemic native species. Native forests usually contain a variety of species with complex ecological relationships.

Hardwood forests, with eucalypts as the prominent commercial species, are the main timber producing native forests in SEQ. Cypress forests have a minor occurrence in SEQ and are insignificant in terms of wood production. Although rainforest is distributed throughout the region, its management is consistent with government policy prohibiting logging in this forest type on public lands.

Plantation Forest
Plantations are deliberately planted for the efficient production of timber. They usually contain a single tree species that has been selected for its fast growth and wood quality. The species grown can be native or exotic.

1.5 METHODS

The project proposal method (appendix 1.1) was followed where possible. As a descriptive report, the methods were restricted to a review of recent literature on the Queensland timber industry. A general lack of consistent information forced reliance upon DPI (1998) and Consultancy Bureau (1997). A literature search for information on the history of the timber industry in SEQ and collection of timber production data for the last 20 years from DPI–Forestry Yearbooks for the forests of SEQ were the only significant research activities undertaken.

1.5.1 Limitations

Information was not available for the SEQ bioregion specifically. Consequently, the region was approximated by Forestry District boundaries (refer to map 1) for production statistics and ABS statistical local areas for employment and gross industry product details. A breakdown of the statistical data into native versus plantation and publicly owned versus private forest contributions would be informative, however, was unavailable for all industry sectors, except the primary processors.

The overlap of the Monto and Yarraman Forestry Districts on areas outside of SEQ has not been accounted for in the data presented herein and with the result that what follows will overstate the harvest levels from the forests of SEQ. The resulting overestimates are believed to be small relative to the totals for SEQ. Although SLAs have been used to generate the SEQ employment figures, they still include some outside areas and consequently will slightly overstate the size of timber industry employment.

2.0 FOREST INDUSTRY REGULATORY ARRANGEMENTS

2.1 LEGISLATION

The regulation of the Queensland forest industry is achieved through legislation and associated controls exercised by all three levels of government.

2.1.1 Commonwealth Government

International

The Commonwealth Government has responsibility for the issue of export licenses for certain products in accordance with the provisions of the *Export Control Act (1982)*. Conditions apply to the export of raw product, for example, woodchips may only be sourced from certain areas. The Commonwealth also has responsibility for national compliance with obligations imposed by international agreements, treaties and conventions to which Australia is a party.

National

The National Forest Policy Statement (1992) aims to ensure forests are managed in an ecologically sustainable manner and that a viable, sustainable forest products industry is developed. One of its goals is for Australia to develop internationally competitive and ecologically sustainable wood production and woods products industries.

The *Australian Heritage Commission Act (1975)* established a statutory body, the Australian Heritage Commission, to advise the Commonwealth Government on places which have national estate significance and how they may be protected. The Act places obligations on Commonwealth ministers not to undertake any action that may adversely affect a place on the Register of the National Estate, unless there is no feasible or prudent alternative, and that action be taken to minimise this effect where it is unavoidable.

The *Environment Protection (Impact of Proposals) Act (1974)* requires that environmental impacts are considered when Commonwealth actions are undertaken and decisions made. The Act is triggered when a Commonwealth action will, or is likely to, affect the environment to a significant extent. The Minister for the Environment considers whether there will be a substantial impact on the environment, whether an Environmental Impact Statement or Public Environment Report is required, and whether potential impacts have already been adequately considered through other

processes, such as a State Environmental Impact Statement or a Comprehensive Regional Assessment / Regional Forest Agreement.

2.1.2 State Government

The Queensland Government has control of forest products on publicly owned land and regulates sawmills and the marketing of timber products. The *Forestry Act (1959)* provides the basis for the reservation and management of State forests and the sale of forest products from publicly owned lands. The *Timber Utilisation and Marketing Act (1987)* controls the sale and use of certain timbers (eg. lyctid susceptible and/or improperly dried). The *Diseases in Timber Act (1975)* provides for the treatment, prevention and control of any disease in timber.

The *Sawmills Licensing Act (1936)* was introduced to provide for licensing of sawmills. This licensing arrangement could be used to regulate the utilisation of private timber, however, it is ineffective in its present form. Most primary processing plants are required to be licensed, a condition which applies equally to mills utilising publicly and privately owned native and plantation timber. License holders must report the volume of timber processed to DPI–Forestry on a quarterly basis and are restricted to a maximum log volume throughput. Persons may be granted a 'certificate of exemption' from the provisions of this Act if they intend to use the timber on site, or under such terms and conditions as DPI–Forestry sees fit.

In relation to the State Government's responsibility for nature conservation and environmental protection within the State, the *Nature Conservation Act (1992)* provides for the conservation of nature on all tenures, both public and private and for the reservation and management of areas for nature conservation purposes. The *Environmental Protection Act (1994)* requires that certain uses of the environment be licensed to ensure ecologically sustainable development. For example, primary and secondary processors with a design production capacity of 500 tonnes or more per annum, commercial chemical treating of timber, and sawmills that generate smoke in the incineration of residue all require a license. This legislation is also subject to broad application and can impact on all sectors of the industry.

The State Government also has responsibilities relating to the development of the natural resources of the State.

In response to the Commonwealth National Forest Policy Statement (1992), Queensland produced a policy statement *Greater Planning Certainty (1993)*, which committed the State to:

- a process of regional forest assessment and planning of the state's forest resource
- development and monitoring of ecologically sustainable development
- identification of areas to provide security of access to forest resources.

2.1.3 Local Government

Local Government has responsibilities devolved by the *Local Government (Planning and Environment) Act (1991)* relating to planning and development at the local level, with responsibility for production of strategic plans and planning schemes. Through these mechanisms, local government can determine permissible land uses. This has potential implications for the siting of processing facilities and the approval of specific developments. The *Integrated Planning Act*

(1998) allows for commercial forestry operations to proceed without the need for further approvals once the initial development has been legitimately established.

2.2 REGULATORY BODIES

The Department of Natural Resources (DNR) has responsibility for custodial, regulatory and non-commercial aspects of the management of the publicly owned State forests and leasehold land forest resources. This is achieved through the provision of management guidelines for adoption by DPI–Forestry. All guidelines will consider the requirements of the range of legislation described in section 2.1. The Department of Natural Resources therefore has responsibility for some aspects of the Forestry Act.

DPI–Forestry is responsible for the commercial management of Queensland's publicly owned forest resources, development of forest industries (including both forest and timber research) and marketing of the forest products harvested from State forests. DPI, not DPI–Forestry, is now responsible for the licensing of sawmills.

The Department of Environment and Heritage (DEH) has responsibility for the *Nature Conservation Act (1992)* and the *Environmental Protection Act (1994).*

3.0 RESOURCE DESCRIPTION

This chapter describes the Queensland timber resource and attempts to define the extent of activities in SEQ. Describing timber harvest levels from the SEQ resource is complicated by the fact that no local authority, statistical or management boundaries coincide with the SEQ RFA boundary.

3.1 HISTORICAL DEVELOPMENT OF THE FOREST RESOURCE IN QUEENSLAND

3.1.1 Forests for Exploiting – 1824 to 1906

When surveyor John Oxley explored the Brisbane River in 1823, he was impressed by the magnificent stands of hoop pine that straddled its shores (Carron 1985). He correctly anticipated its importance to forestry development in Queensland, like the cedar was to Sydney and Huon pine was to Hobart (Carron 1985). Indeed, until the 1930s the industry's main activity would be processing the native softwood resource.

European impact upon forests of the South East Queensland RFA region first commenced around the time of settlement of Brisbane in 1824, probably led by the rapid northward advance of the cedar cutters along the east coast. Settlers, anxious to profit from the apparently fertile soils, soon followed them into the region's forests (Carron 1993). Crude milling operations were established with settlement to meet local demands and for export to the south. By 1853, timber was already being milled in the Wide Bay region for export to Sydney (Carron 1985).

During the 1870s, the extent of timber wastage in Queensland was becoming clear. By the early 1900s, indiscriminate logging and clearing of high value timber generated great concern from the fledgling timber industry and the then Forestry Branch of the Lands Department (Carron 1985). Against a State government and population that favoured settlement over reservation for production forestry, the Forestry Branch successfully lobbied for reservation of publicly owned land and the first legislation to provide for the protection of State forests and national parks was assented to in 1906 (Carron 1985).

3.1.2 Forests for Timber – 1906 to the 1960s

Despite the best efforts of the Forestry Branch to capture the more valuable forests within State forests, reservation was only afforded to those forest areas with no alternative use (Carron 1985). The reservation of the State's best forests, including its softwoods and rainforest species could not

"*be regarded as a subject for serious consideration*[1]". By 1911, about 1.5 million hectares of State forests and timber reserves had been gazetted in Queensland (Carron 1985). In that year the first serious attempts to determine an annual permissible cut from publicly owned forests had begun. This was not to be related to industry demands, but to the capacity of the reserved forests to supply timber. Forest assessments aimed to ascertain growth rates for different species and determine optimal regeneration techniques were commenced (Carron 1985).

The predicted decline in availability of native timbers concerned the Forestry Branch to the extent that by the end of World War One, stimulating regeneration of cut-over forest was deemed necessary. Much of the highly productive forests had already been lost to settlement, while many of those that remained were comprised of unmerchantable trees, or were damaged by new destructive fire regimes, such that few trees of merchantable quality (given the technology then available) remained (Florence 1996). The Forestry Branch responded with silvicultural improvement regimes, such as ringbarking old and unproductive trees, conducting regeneration burns and slashing competition during seedling establishment, while 'eking out' supply under a diameter limit cutting system. Although strongly directed to ensuring short term log supply, the aim was to progressively develop the stands into a high yielding resource (Florence 1996).

In 1924 there was another long, hard look at the State's resources and this heralded the first serious attempts to establish a plantation base in the state. At the then current rate of harvest of native hoop, bunya and kauri forests, the native softwood resource would be exhausted by 1938 (Carron 1985). It was decided that plantations of hoop pine were to be established wherever possible. The high site quality demanded by this species was always going to curtail any dreams of a large native conifer plantation estate, so when slash pine (*Pinus elliottii*) and loblolly pine (*P. taeda*) began to show promise in the wallum[2] country a few years later, planting of these species began. Until these plantations came on line, the native resource was to be rationed to sawmills. This rationing was better facilitated by the introduction of sawmill licensing arrangements in 1936 which still remain today (Carron 1985).

A royal commission in 1930–31 to consider forest boundaries in the northern half of the State received a submission from the Forest Branch pushing for reservation of forests for the production of valuable cabinet timbers. The response in the report of the royal commission epitomised the opinion held throughout Australia at that time: "*The productive wealth of the country at present suffers from the fact that there are too many rather than too few trees*" (Carron 1985).

3.1.3 Forests for Multiple Use – the 1960s to the Present

The 1960s ushered many changes in forest management in Queensland. Firstly, forestry shed the burden of being a sub department in the Department of Lands and became a department in its own right (Carron 1985). Silvicultural regimes in native forests were improving in terms of the quality of regeneration achieved. A greater emphasis was placed on tree quality, by removing substandard and slow growing trees, while retaining superior stems with good growth potential (Florence 1996). This period also fostered greater recognition of environmental issues.

The awakening of Australia's environmental conscience during the 1960s began to put pressure on the managers of Queensland's forests (Johnston 1987). The pendulum had swung and public

[1] Under Secretary of the Department of Lands, 1910. Cited in Carron (1985).
[2] Wallum country refers to the coastal flats between Brisbane and Coolum where infertile and poorly drained soils have provided ideal conditions for tea tree heath and swamp.

pressure was now for reservation – but reservation for preservation, not production forestry (Carron 1993). During recent times, environmentalists have claimed inadequate provision for nature conservation, wildlife management, landscape protection and forest recreation by forestry services within State forests (Florence 1996). They also stress that sustainable yield does not imply that management is ecologically sustainable and that more attention needs to be given to establishing principles of ecologically sustainable management (Florence 1996).

Some people were of the opinion that national parks were being over utilised by recreationists, which prompted State forests to be developed for recreational purposes (Carron 1985). In addition to providing recreation opportunities, State forests implicitly function to provide clean water from forested catchments, and in line with the DPI–Forestry's (now DNR's) multiple use concept, have been available for grazing, apiculture and other forms of use (DPI 1994). Grazing has always been regarded as being compatible with wood production in Queensland and appropriate consideration is paid to the needs of the honey industry (Carron 1985). Although multiple use of State forest had been part of their management for years, it was not until 1976 that it was legislated.

On average throughout Australia, about 25 per cent of the annual native forest timber supply have been from private forests. In Queensland this rate has been considerably higher at around 50 per cent for the last 40 years (Carron 1985). The majority of it comes from tree clearing for agricultural pursuits or from sale of an immediate crop with little regard to the forest's regeneration (DPI 1998). Increasingly stringent harvesting guidelines for State forests over the last couple of decades has contracted the harvest from public native forests and placed greater pressure upon the private native forest resource (DPI 1998).

In Queensland, throughout the period from the 1960s to the present, the publicly owned plantation harvest has been increasing, especially during the last decade, and has now overtaken native forests as the dominant supplier of logs to the wood processing industry. Plantations will continue to be the dominant supplier of logs, however, the native timbers, with their very different characteristics, could be marketed to supply small niche market industries that focus on value added produce.

3.2 CURRENT OWNERSHIP OF THE FOREST RESOURCE

3.2.1 Queensland

The National Forest Inventory (NFI) reports that Queensland has approximately 49 million hectares of forest (DPI 1998)[3]. This figure, which is consistent with the National Forest Policy Statement (1992) definition of forest, is higher than previous estimates due to the historical focus on commercial forests. The NFI estimate includes stands that have previously been classified as woodland.

Appendix 3.1 provides a breakdown of the ownership and management of this resource. This shows that 58 per cent of Queensland's forest resource is publicly owned, with most of this (about 73 per cent) occurring on public leasehold lands. These are comprised largely of publicly owned lands that are leased to private individuals and used principally for pastoral purposes. Of the 20.7 million hectares of publicly owned forest on leasehold land, only about seven per cent or 2.3 million

[3] Based upon the *National Forest Policy Statement* (1992) definition of forest. The *Nationally Agreed Criteria* (ANZECC / MCFFA 1997) uses a similar definition of forest. Both these definitions include vegetation types previously termed 'woodland'.

hectares is classified as productive sawlog forest by DPI–Forestry, according to their yield regulation system.

The remaining eight million hectares of publicly owned forest in the State is found on public reserves. These are owned and managed by the State Government to meet a number of specific objectives. Timber production is an important management objective of State forests and Timber reserves, but not an exclusive one. Other public reserves such as national parks and conservation reserves are principally managed for nature conservation and recreation, and do not include timber production as a permitted management activity.

Throughout Queensland, private forests make up 20.4 million hectares, consisting of 17.1 million hectares of freehold land, and 3.3 million hectares of leasehold land where the State does not retain rights to the timber (eg. freeholding leases).

3.2.2 SEQ

SEQ comprises around 6.1 million hectares of the State of Queensland. This land is managed under the various forms of land tenure outlined in table 3.1. Today, forest grows on approximately 2.7 million hectares of SEQ (CRA 1998a).

Table 3.1 Tenure Classes in SEQ RFA Region

TENURE	AREA (ha)	% of SEQ
Freehold	4,253,583	69.78
State forest	887,837	14.56
State reserve	78,597	1.29
Timber reserve	23,992	0.39
National park	322,672	5.29
National park (proposed)	86,067	1.41
Other Crown Land	414,978	6.81
Unclassified	28,150	0.46
TOTAL SEQ	6,095,875	100

Source: Land tenure categories derived from the Digital Cadastral Database (1997)

The private native forest estate in SEQ, comprising freehold and leasehold land where timber rights are held by the lessee, amounts to only six per cent (1 359 503 ha) of the Queensland total private native forest estate. In addition, there are around 16 000 hectares of privately owned plantations (table 3.2) (CRA 1998b). Private forests, and forests on leasehold land where timber rights are held by the lessee, are shown on map 1.

Table 3.2 SEQ Private Forest Area

Forest type	Area (hectares)
SEQ – total native	1 359 503
SEQ – total plantation	15 775
SEQ total private forest	***1 375 278***
Queensland total private forest	20 400 000

Source: SEQ total native from CRA (1998b), SEQ total plantation from CRA (1998a) and Queensland total from DPI (1998).

The distribution of State forest and leasehold land on which the State retains the timber rights in SEQ is presented in map 1 and tabulated in table 3.3. Comparison of tables 3.2 and 3.3 indicates that the gross productive publicly owned and private forest areas in SEQ are roughly equal in size.

Table 3.3 presents the gross publicly owned land area that could be managed for timber production in SEQ, however, in reality (for the reasons introduced in section 3.3) much less is actually available. Project report SE1.2 (CRA 1998a) goes into more detail and states that the net available area of publicly owned native forest is only 338 100 hectares within SEQ. The remainder of the forested land in SEQ consists largely of reserves, such as national parks.

The SEQ forest estate can be conveniently stratified into three broad categories. The first, publicly owned native forests, is described in 3.3. Sections 3.4 and 3.5 cover the publicly owned plantation resource and the private forests respectively.

Table 3.3 Distribution of Production Crown Forests in SEQ by Forestry District (1997 Hectares)

	Beerburrum	Imbil	Maryborough	Monto	Yarraman	Other	Total
Native State forest	94 174	126 930	210 576	176 920	106 494	15 082	730 176
Timber reserve	438	1 855	2 057	19 562	80	–	23 992
State timber rights on OCL	7 066	2 031	26 885	84 525	7 783	–	128 290
Total native forest	***101 678***	***130 816***	***239 518***	***281 007***	***114 357***	***15 082***	***882 458***
Plantation State forest (1996–97)*	17 986	21 716	89 785	4 091	18 342	6 836	158 756
Total forest	**119 664**	**152 532**	**329 303**	**285 098**	**132 699**	**21 918**	**1 041 214**

Note that around 40 000 ha of State forest is not forested (CRA 1998a, table 3.3), including non-eucalypt, non-forest vegetation (heathland, *Banksia* forest, mangrove, low coastal complex < 5 m in height) and non-vegetation (sand blows, waterbodies, etc.).
* Includes fallow areas.
Source: DNR spatial analysis of tenure by district for native forests and DPI (1997) for plantation area by district.

3.3 PUBLICLY OWNED NATIVE FOREST

There are about 3.8 million hectares of native State forests and timber reserves from which DPI–Forestry may harvest timber in Queensland, however, only about 2.2 million hectares are actually used for timber production. The remaining 1.6 million hectares are reserved for various purposes where harvesting is incompatible with the primary management intent, such as scientific and recreational areas, or are unproductive forest types. When the 2.2 million hectares are added to that portion of publicly owned leased land managed for timber production, the total area of publicly owned native forest available for production is about 4.5 million hectares.

There are over one million hectares of gross productive publicly owned forests in SEQ. As table 3.2 illustrates, about 85 per cent (882 458 hectares) is native forest.

3.3.1 Native Timbers of Significance in SEQ

The hardwood forests, which dominate the native timber production of SEQ, consist largely of *Eucalyptus* species, the most commercially important being:

- Spotted gum
- Blackbutt

- White mahogany
- Grey gum
- Grey ironbark
- Brush box
- Narrow-leaved red ironbark
- Broad-leaved red ironbark..

3.3.2 Management

The *Forestry Act 1959* establishes the mandate for the management of the public forest estate available for wood production, providing for:

"forest reservations, the management, silvicultural treatment and protection of State forests, and the sale and disposal of forest products …. the property of the Crown on State forests, timber reserves and on other lands;"

Amongst the functions and duties of the administering body ("the corporation") set out in the *Forestry Act 1959*, is the management of State forests and forest entitlement areas "with the object of maintaining as far as practicable adequate supplies in perpetuity of timber …" (section 11). On State forests, the cardinal principle in their management (section 33) is "the permanent reservation of such areas for the purpose of producing timber and associated products in perpetuity and of protecting a watershed therein". The corporation must also have due regard to, amongst other things, "the desirability of conservation of soil and the environment", "protection of water quality" and "the possibility of applying the area to recreational purposes".

The legislative and policy background under which operations on Crown lands are conducted is detailed in the "Background to Assessment of Queensland's Ecologically Sustainable Forest Management Systems and Processes: Description Report" (DNR–RM *et. al.* 1998) produced by the South East Queensland RFA Ecologically Sustainable Forest Management Technical Committee. This report was produced as part of the assessment of ESFM in SEQ.

Administratively, management responsibilities for the publicly owned forest estate available for wood production are split between the Department of Natural Resources and the Department of Primary Industries. As set out in the Administrative Arrangements Order 29 June 1998 (Queensland Government Gazette 1998), DNR is responsible for the custody and management of State forests and for natural resource management including native forest management. DPI–Forestry (DPI–F) is responsible for commercial forestry.

Administrative processes are set out in the "Memorandum of Understanding between DNR Resource Management and DPI Forestry" (DNR–RM and DPI–F 1996) and the associated "Operational Guidelines: Management of State Forests and Other State Land" (DPI–F and DNR 1997). The "DPI Forestry Commercialisation Charter" (DPI–F 1996) establishes DPI's role and responsibilities in relation to its commercial forestry operations. Native forest timber production operations, including harvesting and silvicultural treatment must comply with the "Code of Practice for Native Forest Timber Production".

DPI (1998) summarises the management and operational control of timber production activities on the Crown forest estate. CRA reports SE1.2 (CRA 1998a) and Turner (1998) provide details of yield regulation systems applying to this estate.

3.3.3 Harvest Levels

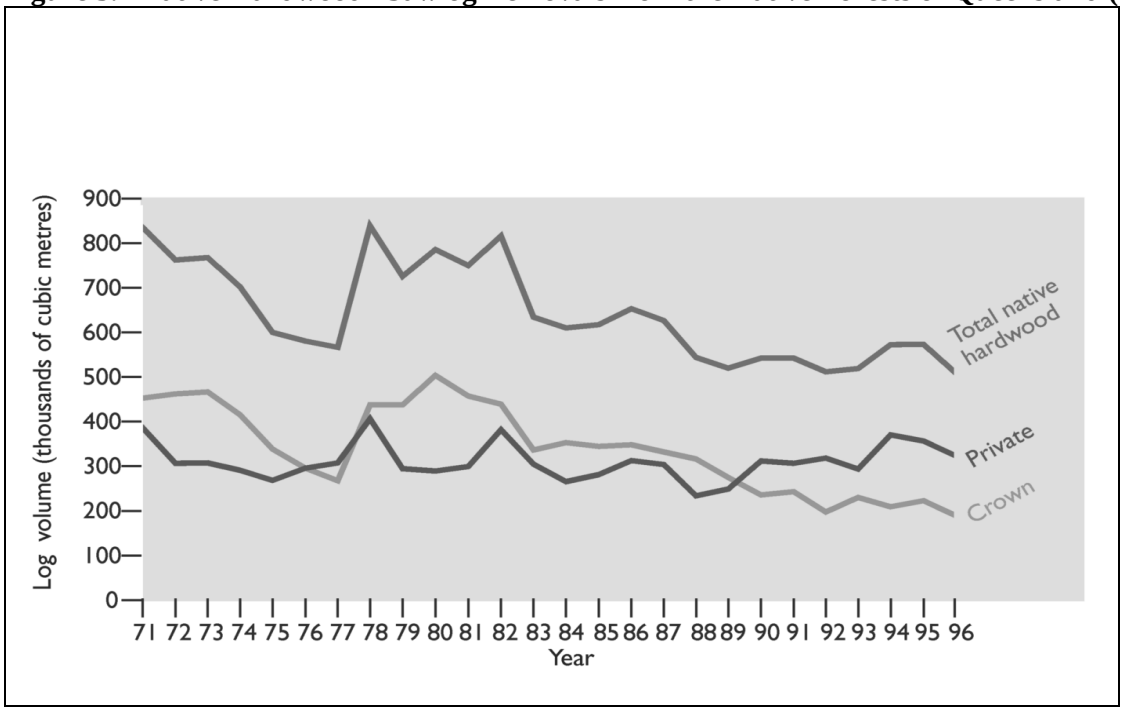
Hardwoods

Colloquially, DPI–Forestry refers to *Eucalyptus* and other dry sclerophyll species as hardwoods and many of the wet sclerophyll forest non-*Eucalyptus* hardwood species are grouped into the category scrubwoods. The harvest volumes of these timbers were reported separately until 1989–90. Since then they have been reported together. There has been a steady decline in the Queensland publicly owned hardwood and scrubwood sawlog harvest between 1980 and 1996–97 from 500 000 m^3 to around 200 000 m^3 (figure 3.1). Figure 3.2 demonstrates that SEQ has accounted for around 70 000 m^3 of this fall. This is the continuation of a downward trend that has been in the hardwood industry since the end of World War II. The reasons for this include:

- increasingly stringent environmental constraints
- decreasing area of production forest, for example the removal of the Wet Tropics and Fraser Island within the last decade
- less than optimal timber species regeneration and stand management in cut-over forests
- historical overestimates of sustainable yield that have become apparent with improved inventory
- the change in silviculture as operations have shifted from forests receiving their first cut to regrowth forests.

Table 3.4 details all timber removals from publicly owned and private forests in Queensland from 1992–93 to 1996–97. The publicly owned miscellaneous category includes all publicly owned timber other than sawlog (as described in section 3.7). Note that no records of miscellaneous wood products are available for private forests. In 1996–97 the total publicly owned hardwood production in the State was 263 042 m^3, of which 207 628 m^3 was sawlog. The importance of the publicly owned forests of SEQ to the Queensland timber industry is exemplified by the fact that about 60 per cent of the publicly owned hardwood sawlog harvest is cut from SEQ forests (see table 3.5).

Figure 3.1 Native Hardwood* Sawlog Removals from the Native Forests of Queensland (1971 to 1996)



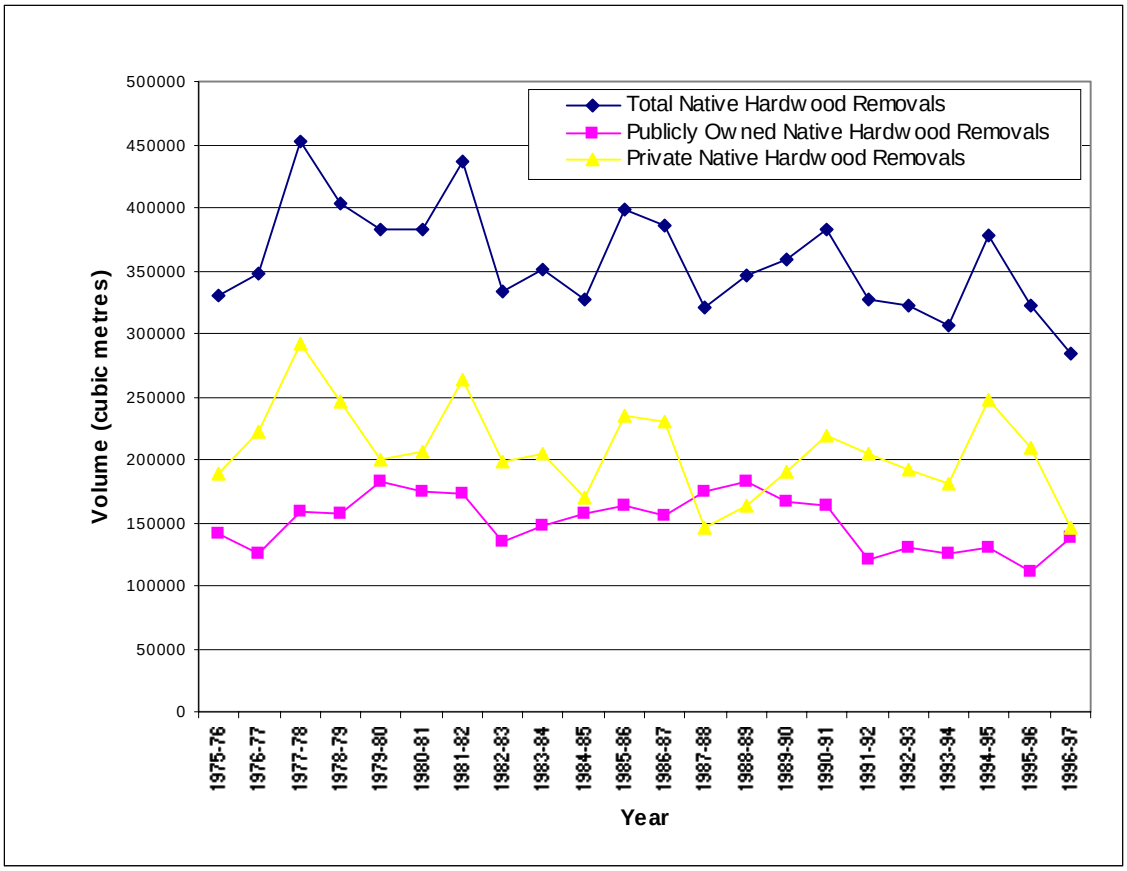
*Includes scrubwoods which were reported separate from hardwoods until 1989–90.
Source: DPI (1998).

Native forest conifers

In the early days of settlement in SEQ, the harvest of other coniferous species, including *Araucaria cunninghamii*, *A. bidwillii* and *Agathis robusta* from native forests was the main activity of timber cutters (Carron 1985). This resource continued to be a significant source of timber until 1989–90, when the harvest of these stands was reduced. The shift out of native coniferous stands was the culmination of policy established in 1924 that these forests would be cut faster than they could naturally regenerate until plantations became major timber producers in Queensland.

Figure 3.3 presents the declining harvest of conifers from the publicly owned native forests of SEQ over the period 1975–76 to 1996–97. The fall in production can be almost totally attributed to species other than cypress pine.

Figure 3.2 Native Hardwood* Sawlog Removals from the native forests of SEQ (1975–76 TO 1996–97)



*Includes scrubwoods which were reported separate from hardwoods until 1989–90.
Source: DPI–Forestry Yearbooks 1976 to 1997.

Table 3.4 Timber Harvest in Queensland 1992–93 TO 1996–97 (Cubic Metres)

Forest type	Year				
	1992–93	1993–94	1994–95	1995–96	1996–97
NATIVE FORESTS					
Hardwood					
Publically owned sawlog	226 469	206 344	219 492	186 265	207 628
Private sawlog	280 335	352 999	339 225	306 662	219 321
Publically owned Miscellaneous products*	61 478	51 998	69 741	61 360	55 414
Total	***568 282***	***611 341***	***628 458***	***554 287***	***482 363***
Cypress Pine					
Publically owned sawlog	116 556	138 373	145 363	120 707	131 654
Private sawlog	50 006	69 026	62 363	57 222	38 763
Total	***166 562***	***207 399***	***207 726***	*177 929*	***170 417***
Other Conifers					
Publically owned sawlog	789	773	1 760	435	0
Private sawlog	9 120	7 743	14 409	14 631	4 074
Total	***9 909***	***8 516***	***16 169***	***15 066***	***4 074***
Total native	***744 753***	***827 256***	***852 353***	***747 282***	***656 854***
% Publically owned*	***54.42***	***48.05***	***51.19***	***49.35***	***60.09***
PLANTATION FORESTS					
All plantations					
Publically owned (all removals)	1 023 857	1 170 270	1 421 369	1 371 415	1 444 384
Private (sawlog only)	117 549	135 113	110 021	105 028	53 762
Total plantation	***1 141 406***	***1 305 383***	***1 531 390***	***1 476 443***	***1498146***
% Publically owned†	***89.70***	***89.65***	***92.82***	***92.89***	***96.41***
TOTAL (all timber)	**1 886 159**	**2 132 639**	**2 383 743**	**2 223 725**	**2 155 000**

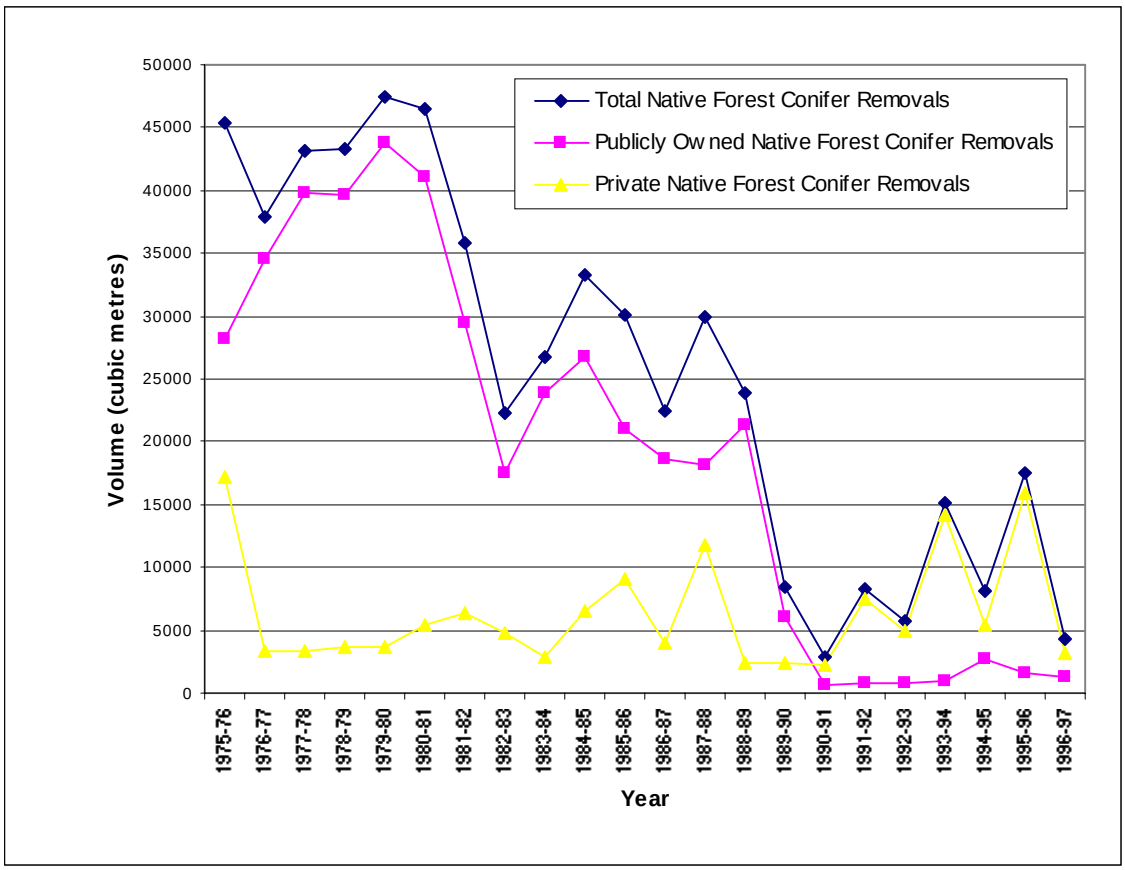
*The publicly owned Miscellaneous Products volumes have been adjusted downwards from the figures reported in the DPI–Forestry yearbooks according to the adjustment factors published in DPI (1997).

** Per cent publicly owned refers to the proportion of Queensland's total native forest timber harvest that was sourced from publicly owned land

†Per cent publicly owned refers to the proportion of Queensland's total plantation timber harvest that was sourced from publicly owned land.

Source: DPI (1994; 1995; 1996, 1997) and Consultancy Bureau (1997).

Figure 3.3 Native Conifer Sawlog Removals from the Native Forests of SEQ (1975–76 to 1996–97)



Source: DPI–Forestry Yearbooks 1976 to 1997.

Table 3.5 Sawlog Harvest from Crown and Private Native Forests in the SEQ Region 1993–94 to 1996–97[+] (Cubic Metres)

Native forest type		Forestry district					Total SEQ	Total QLD	SEQ as a % of QLD
		Beerburrum	Imbil	Maryborough	Monto	Yarraman			
Hardwood									
93 – 94	P.O.	25 690	29 031	30 587	31 990	7 705	**125 003**	206 344	60.58
	Private	40 341	4 268	56 433	45 129	34 566	**180 737**	281 499	64.21
94 – 95	P.O.	27 317	36 194	23 087	31 555	11 487	**129 640**	219 491	59.06
	Private	100 041	3 022	48 363	66 126	30 813	**248 365**	346 160	71.75
95 – 96	P.O.*	29 487	25 250	17 777	29 912	9 341	**111 767**	186 265	60.00
	Private*	74 050	4 872	45 871	55 358	30 031	**210 182**	306 662	68.54
96 – 97	P.O.	29 842	24 326	23 719	44 582	14 903	**137 372**	207 628	66.16
	Private	49 211	6 023	39 447	33 281	18 080	**146 042**	219 321	66.59
Average publicly owned contribution *(%)*		*29.88*	*86.33*	*33.36*	*40.85*	*27.68*	***39.08***	*41.54*	
Cypress									
93 – 94	P.O.	153	0	5	0	0	**158**	138 373	0.11
	Private	15	0	12	7 080	80	**7 187**	61 693	11.65
94 – 95	P.O.	26	0	0	979	0	**1 005**	145 362	0.69
	Private	14	0	2	3 600	53	**3 669**	58 871	6.23
95 – 96	P.O.	0	0	0	1 175	0	**1 175**	120 707	0.97
	Private	2	0	0	1 740	3	**1 748**	57 222	3.05
96 – 97	P.O.	15	0	0	1 187	0	**1 202**	131 654	0.91
	Private	8	0	0	78	25	**111**	38 763	0.29
Average publicly owned contribution (%)		83.26	n/a	26.32	21.09	0.00	**21.78**	71.23	
Other Conifers									
93 – 94	P.O.	0	773	0	0	0	**773**	773	100.00
	Private	5 071	1	1 306	12	624	**7 014**	7 743	90.59
94 – 95	P.O.	4	1 734	0	0	22	**1 760**	1 760	100.00
	Private	514	0	500	4	684	**1 702**	3 702	45.98
95 – 96	P.O.	0	435	0	0	0	**435**	435	100.00
	Private	4 945	0	3 310	5 222	668	**14 145**	14 631	96.68
96 – 97	P.O.	0	0	0	0	0	0	0	n/a
	Private	1252	0	404	0	1346	3002	4074	73.69
Average publicly owned contribution (%)		0.03	99.97	0.00	0.00	0.66	**10.29**	8.96	

P.O. stands for Publicly Owned

+ Differences between Queensland total figures for other conifers in 1994–95 presented in this table and table 3.1 are due to the use of updated figures in table 3.4. These were unavailable in terms of updated Forestry District breakdowns and hence the old figures have been adhered to for table 3.5.

* The ABARE Mill Survey (Bull *et. al.* 1998) found that the total throughput of hardwood logs in SEQ mills was around 400000 m^3 during 1995–96. This is greater than the official DPI–Forestry figures presented above for 1995–96 where the total was 321 949 m^3.

Derived from DPI (1994; 1995; 1996 and 1997).

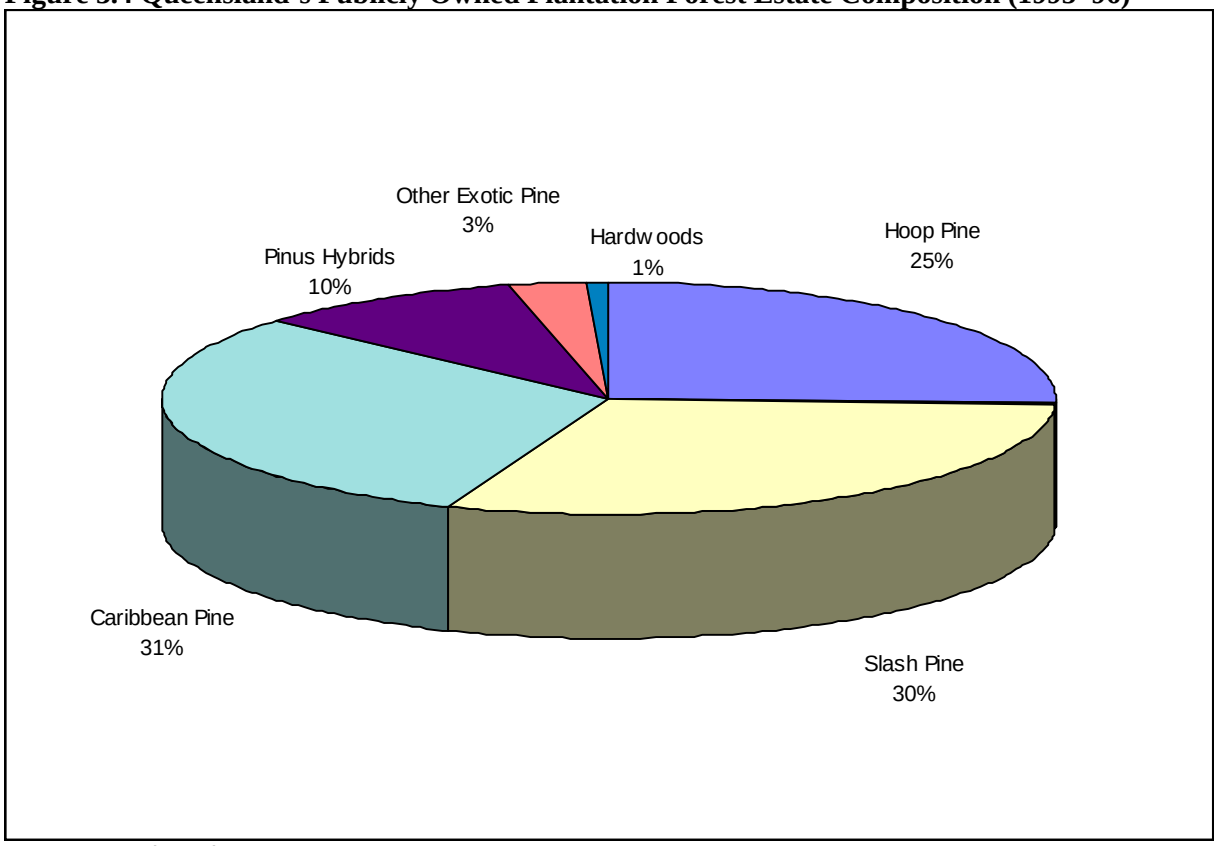
3.4 PUBLICLY OWNED PLANTATION FOREST

The composition of the 180 000 hectares of Queensland's state owned plantation resource is presented in figure 3.4. About 71 per cent of all publicly owned plantation areas are comprised of the exotic species slash pine (*Pinus elliottii*), Carribbean pine (*P. caribaea*), and their hybrid. The majority of these plantations are located between Brisbane and Maryborough.

The native hoop pine (*Araucaria cunninghamii*) is the next most significant plantation species, accounting for one quarter (about 45 000 ha) of the total plantation area. Most of the hoop pine plantations have been established on fertile, ex-rainforest sites in the coastal hinterland ranges.

The remaining 4 per cent of public plantations are comprised of other exotic pine species (mainly *Pinus radiata*), various native species such as bunya pine (*A. bidwillii*) and some eucalypts.

Figure 3.4 Queensland's Publicly Owned Plantation Forest Estate Composition (1995–96)



Source: DPI (1998).

The SEQ region contains approximately 90 per cent (158 756 ha) of the total (180 000 ha) publicly owned plantation resource. This included 44 000 hectares of native conifer plantation, and around 107 000 hectares of exotic pine species plantation. The Maryborough Forestry District alone accounts for more than half of the total publicly owned plantation area. The Imbil (12 per cent), Yarraman (10 per cent) and Beerburrum (10 per cent) Forestry Districts also carry significant portions of the plantation estate.

3.4.1 Management

Public plantations were first established in Queensland more than 70 years ago and the management techniques now employed reflect a long period of extensive experience, research and development.

For example, significant improvements in productivity have been achieved through genetic breeding, improved weed control methods and research into soil nutrient status (DPI 1998).

Plantations can be considered as a long rotation agricultural crop since they are intensively managed primarily for the production of timber. The crop rotation length for the exotic species and hoop pine is about 30 and 50 years respectively. This is determined on the basis of maximising the net return over the whole growth period. It is common to carry out at least one harvesting operation (thinning) before the trees reach maturity. This has the dual effect of removing less productive trees and reducing competition among the remaining trees.

3.4.2 Harvest Levels

The annual harvest from publicly owned plantations has grown rapidly over the last 15 years (DPI 1998). Table 3.4 shows that the total publicly owned Queensland plantation harvest was around 1 400 000 m^3 in 1996–97, of which 1 000 000 m^3 was sawlog. The recent rapid growth is due to the commencement of the first major 'final crop' sales of the mature State-owned plantation resource and has led to the plantation harvest overtaking native forests as the dominant supplier of sawlogs to the timber industry in the early 1990s.

SEQ accounts for 95 per cent of the total Queensland publicly owned plantation production. Given the dominance of the region in terms of plantation area, this trend is set to continue into the future.

Under current projected management, yield predictions suggest that the volume of timber available for harvest from publicly owned plantations will continue to increase into the next century, reaching a peak of about 2.2 million cubic metres in 2002, before settling to about 1.8 million cubic metres in the long term (DPI 1998).

3.4.3 Plantations 2020 Vision

The Commonwealth, State and Territory Governments are working towards trebling the effective area of Australia's plantations between 1996 and 2020. This undertaking is outlined in Ministerial Council on Forestry, Fisheries and Aquaculture *et. al.* (1997). DPI–F is currently developing a plantation strategy for Queensland to provide the State's position with regards to the 2020 Vision. While joint ventures with private landholders will be an essential component of this strategy, it is envisioned that the private sector will be the main driving force.

3.5 PRIVATE FOREST

3.5.1 Management

Information on the resource that is privately owned is scant. Private plantations remain dominated by exotic species, although there has recently been growing interest in the establishment of native hardwoods and rainforest species. Queensland's primary response to the 2020 Vision, has been the development of the three year (1996–97 to 1998–99) Private Forestry Plantation Initiative, with components in research and development, industry strategy and impediments, and joint ventures with private land holders. Under the latter scheme, 560 hectares of hardwood and hoop plantations

have been established on private land in association with DPI–Forestry (Peter Francis[4] 1998, pers. comm, 18 June). Even greater areas of plantations have recently been established outside of the Private Forestry Plantation Initiative by private organisations managing short rotation plantations of *Paulownia* and mixed hardwood species.

Native forest management approaches adopted by private landowners range from total protection from all harvesting through to permanent clearing of large areas for agriculture or residential development. There is no evidence to suggest that the current harvest levels in private native forests are sustainable

3.5.2 Harvest Levels

The following descriptions are based on sawlog data only, as no information has been collected on the volumes of private timber processed within the miscellaneous category (as defined in section 3.7).

Hardwoods

The recent importance of the private native hardwood forests to the industry in SEQ is summarised by table 3.6. A more long term perspective can be gained from figure 3.2. The latter shows that for 20 years between 1975–76 and 1996–97 the private harvest of hardwoods and scrubwoods has exceeded the publicly owned cut in SEQ.

Table 3.6 Hardwood Sawlog Harvest from Native Forest in SEQ (1993–94 to 1996–97, Cubic Metres)

Year	Publicly owned SEQ	Private SEQ	Total SEQ	Private as % of total
1993–94	125 003	180 737	305 740	59.11
1994–95	129 640	248 365	378 005	65.70
1995–96	111 767	210 182	321 949	65.28
1996–97	137 372	146 042	283 414	51.53

Derived from DPI (1994; 1995, 1996 and 1997).

The Queensland private native hardwood forest resource is currently an important supply for the industry, providing 1.6 times the Queensland total publicly owned hardwood sawlog cut in 1995–96. In SEQ the relative importance of the private hardwood forest resource is greater, supplying almost twice as much timber as the harvest from publicly owned forests in the region during 1995–96 (refer to table 3.6).

Native forest conifers

The private harvest of conifers from native forests in SEQ rarely exceeded 10 000 m^3 over the period 1975–76 to 1995–96 (refer to figure 3.3). The future supply of native forest conifer timbers from private land is uncertain.

Plantation

In contrast to the publicly owned plantation resource, private plantation production has remained relatively steady over the last three years (table 3.4). However harvests are expected to decline over the next five years due to conversion of the land to other uses. New private plantation establishment has been slow (DPI 1998).

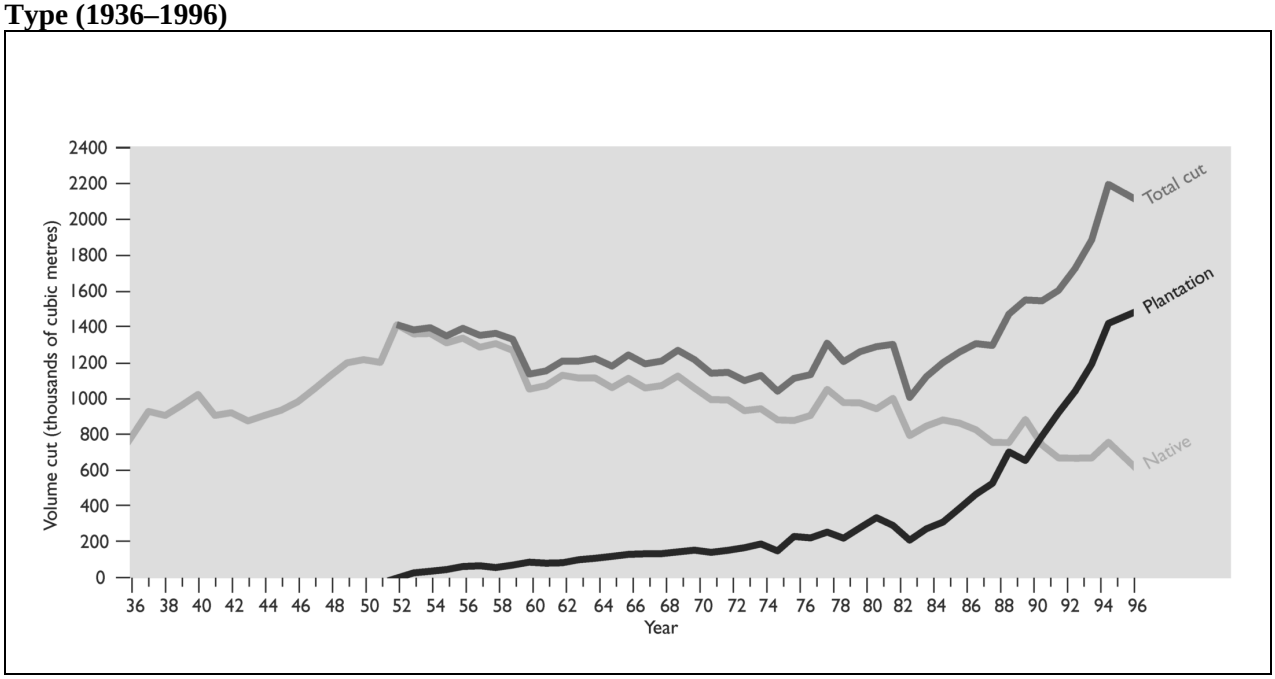
[4] Peter Francis, General Manager, Production Division, DPI–Forestry.

The private plantation harvest is similar in composition to the publicly owned cut – dominated by exotic pines, with some native conifers and very little hardwood timber. The Beerburrum Forestry District is the most significant supplier of private plantation timber, accounting for around 80 per cent in 1994–95. About 90 per cent of the total private plantation harvest have been sourced from within SEQ during the past few years.

3.6 THE OVERALL SITUATION

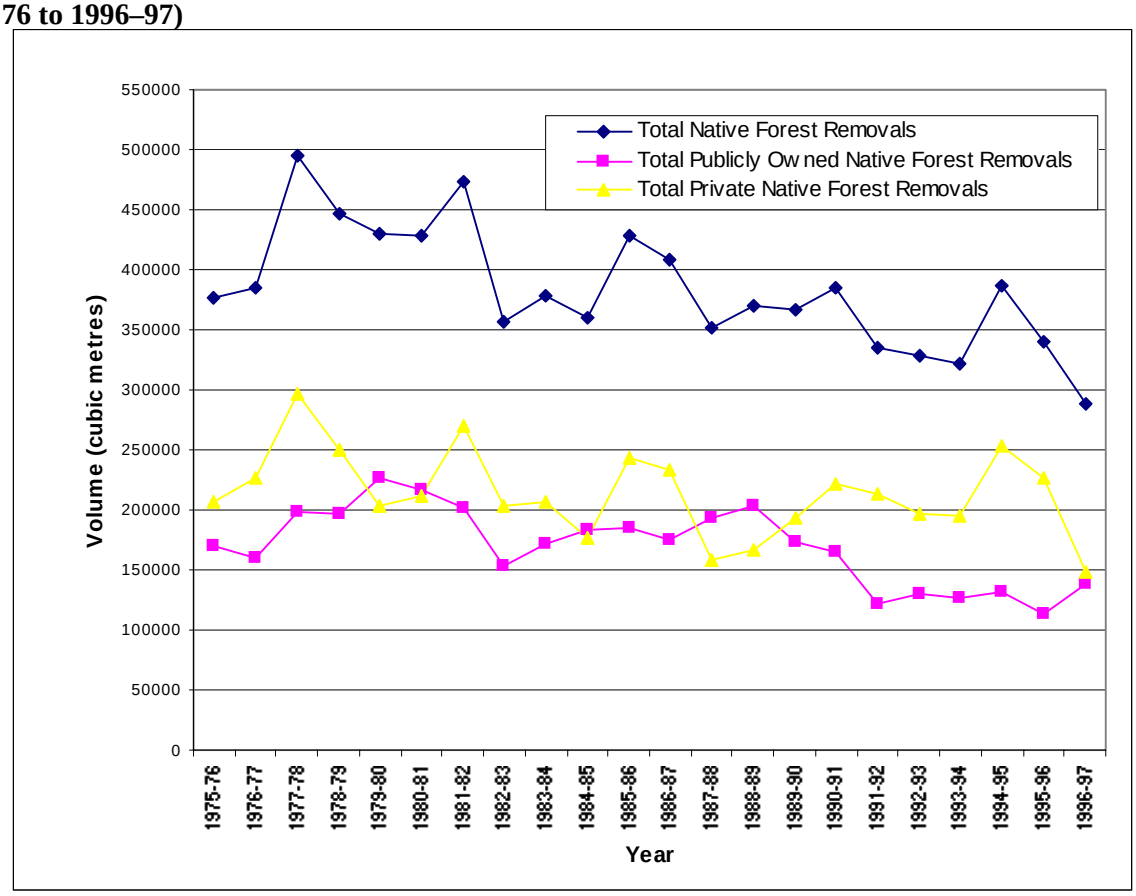
Figure 3.4 presents the trend in Queensland sawlog production from 1936 to 1996. In 1996–97 Queensland timber removals totalled 2 155 000 m^3, of which plantations contributed 70 per cent. The total native timber cut (30 per cent of total Queensland timber removals) was 657 000 m^3 in the same year. About 95 per cent of all plantation timber processed is sourced from SEQ. Overall, the forests of SEQ contributed 75 per cent of the total sawlog volume processed by the Queensland timber industry, with hardwood forests of the region supplying 66 per cent of the total hardwood volume processed in the State. The production trend since the mid-1970s, for all native forests in SEQ, is presented in figure 3.5.

Figure 3.5 Queensland Timber Removals from Publicly and Privately Owned Land by Broad Forest Type (1936–1996)



Source: DPI (1998).

Figure 3.6 Total Harvest of Hardwood and Softwood Timber from the Native Forests of SEQ (1975–76 to 1996–97)



Source: DPI Yearbooks 1976 to 1997

DPI–Forestry predicted yields show that the plantation sector will increase its dominance of production volumes in the future. The size of the publicly owned plantation estate will remain static because DPI–Forestry has ceased clearing native forest to establish plantations and there is little suitable available land. DPI–Forestry currently re–establish approximately 3 000 hectares of clearfelled plantation annually. This is expected to continue until 2002, however, some reductions are foreseen as a result of environmental constraints (Consultancy Bureau 1997).

The overall hardwood sector trend has been one of declining resource availability (figure 3.1). During the last two decades, Queensland's publicly owned hardwood sawlog harvest fell by around 300 000 m^3, but the overall downward trend was slightly offset by increasing private supply. Since about 1990, the private harvest has consistently exceeded the publicly owned hardwood cut.

While yields from privately owned native hardwood forests are currently being maintained, there is very little information available on the extent, quality and productivity of these forests, nor the sustainability of the current harvesting rates. Project Report SE1.4 (CRA 1998b) provides the first attempt to comprehensively address the private resource for SEQ.

3.7 PRODUCTS FROM THE FORESTS OF SEQ

The produce from the forests of SEQ is as diverse as the forests themselves. In broad terms, this produce extends beyond simple extraction values such as timber, honey and cattle production, into areas including habitat for native wildlife and clean drinking water. However, this report is

focusing upon the timber industry and it is wood production on which this section will focus. Information about other products, uses and values of forests is presented in other SEQ RFA reports.

The plantation forests of SEQ supply softwood timbers to processors in SEQ. Hoop pine has excellent aesthetic qualities, making it ideal for furniture and joinery. The timber of exotic pines are generally considered to be less aesthetically appealing, although their physical properties make them suitable as general purpose construction timbers. These exotics generally have a competitive advantage over native hardwood timbers in this application because of their lightness, uniformity and their ease to work with. However, in some applications plantation grown timber cannot substitute for hardwood, such as in exposed conditions. For further information see Margules Poyry (1998).

The native forests of SEQ supply mostly hardwood timber, the characteristics of which include high density, durability in exposed use and high strength rating. Because of these qualities, hardwoods have been traditionally used in a diverse range of structural applications such as house framing, marina piers, electricity poles, bridge girders, decking and railway sleepers. As some of these traditional markets have been eroded through the use of plantation pine in house framing and non-wood products in heavy structural uses, opportunities for native hardwood timber processors exist in marketing the full suite of unique wood qualities of individual hardwood species. For example, species such as blackbutt and spotted gum are being marketed for high quality decking and flooring, based on their unique appearance.

The most important type of timber produce from plantations and native forest, in value and quantity terms, are sawlogs. These are the major inputs to primary processors (mainly sawmill operations), where they are cut into lengths for various purposes, including many of those mentioned above. Reflecting the overall importance of this product type, DPI–Forestry often groups all other timber produce into a category known as miscellaneous products (DPI–Forestry Yearbook 1996–97). Among the 45 or so products that fall into this category, poles, girders, railway sleepers, fence posts, sandalwood and landscape timbers stand out as the more valuable types. With the exception of pulpwood, the miscellaneous products sector of the forest industry draws largely on the native forest resource and is described in more detail in Project Report SE1.2 (CRA 1998a).

For further information on the products from the forests of SEQ the reader is referred to Margules Poyry (1998).

4.0 INDUSTRY SECTOR DESCRIPTIONS

The forest resource discussed in chapter 3 is managed and utilised by a range of public and private corporations. These can be segregated into four major industry sectors:

- forest management
- harvesting and transport
- primary processing
- secondary processing

Each of these industry sectors are described in general without detailing actual employment and industry gross production. These details will be presented in chapter 6.

4.1 FOREST MANAGEMENT

This segment of the industry covers the growing and management of timber production forests. It includes the management of native and plantation forests. DPI–Forestry is the main commercial forest management agency in the State. DNR has custodial responsibility for the public forest estate, which includes the development of an environmental management framework and monitoring DPI–Forestry activities, especially harvesting operations in native forests (see section 2.2).

In addition to nursery activities, fertilising, weed control, pruning and monitoring tree growth, this sector also develops and maintains environmental standards, provides infrastructure, such as roads, prevents and controls fires, pests and diseases, and undertakes important research and development programs.

DPI (1998) reports that private native forest management (where it exists) is likely to be undertaken by millers who own properties, or by contractors who wish to return to a stand in the future. The size of this part of the sector is unknown.

4.1.1 The Publicly Owned Resource: Access and Pricing

The allocation of harvesting rights to publicly owned native forest occurs largely through a non-competitive allocation system administered by DPI–Forestry. Approximately 95 per cent of the publicly owned native sawlog resource is provided under the Native Forest Allocation System introduced in 1976, with the remainder sold competitively (Consultancy Bureau 1997). Subject to maintenance of sawlog commitments in future cutting cycles, all trees are assessed by DPI–Forestry staff and sold as the product yielding highest revenue where possible. In broad terms, raw material access arrangements and pricing can be divided into the three categories outlined below.

Historical publicly owned hardwood allocations and fixed pricing schedules

Sales of publicly owned native forest sawlogs and, less formally, hardwood poles, are organised under allocation systems administered by DPI–Forestry. The system provides a proportion of the calculated sustainable harvest volume for a defined supply area to primary processors who have established rights to crown native resources. These rights have their origins in auction sales of publicly owned timber earlier this century. A successful bidder was automatically given 'auction purchase priorities' for timber over the next few years. The 'auction purchase priorities' were carried over from the previous system into the current uncompetitive allocation system. The 'auction purchase priorities' are viewed by the industry as an important way to maintain industry stability.

The allocation system precludes direct access to publicly owned native timber by primary processors without an allocation. Strict administration of the Native Forest Sawlog Allocation System has in the past given DPI–Forestry a large role in industry supply issues. Recently, this has been relaxed to let market forces better dictate the shape of the Queensland industry, for example, processors can gain access to publicly owned logs by purchasing an established allocation, or by entering into a diversion arrangement with another processor with a publicly owned allocation.

The method for calculating the price (residual stumpage) of standing sawlog and pole timber in the forest has received much attention in the last few years[5]. It is derived by accepting a benchmark market price for sawn timber and deducting from it all production and transportation costs. This allows physical timber characteristics, access and working conditions in each forest area to be accounted for in the price. Prices are also adjusted annually with movements in the Consumer Price Index.

This allocation and pricing systems are currently under review with the aim of making them more flexible and competitive.

Competitive publicly owned timber sales

Virtually all publicly owned plantation timbers are sold competitively using a variety of competitive market processes. Impending sales are usually advertised throughout Queensland and sometimes interstate and overseas. Successful tenderers, who are chosen on the basis of price offered for the timber and their ability to meet the conditions of the contract, receive in return five to 20 year supply agreements with provision for periodic (usually five yearly) review of price and volume.

Where large volumes of native wood products, other than sawlog (for example, railway sleepers), have been identified as surplus to requirements, they may be sold competitively.

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[5] Fixed pricing schedules are used for products other than sawlogs and poles, such as fence posts.

Private forest sales

Timber sales from private forests are entirely commercial arrangements with no regulatory constraints. It is postulated that prices for publicly owned sawlogs could depress prices for private timber below the levels of a competitive market.

4.2 HARVESTING AND TRANSPORT

This sector is involved with delivering the log timber from the standing forest to the primary processing plants. Operations include felling trees, cutting stems into logs, snigging (off road transport) of logs to a loading point near a forest road, loading these logs on to trucks and then hauling the logs to the mill. Operators under contract to the primary processors undertake most forest harvesting. The methods and technology employed vary considerably between the native and plantation resources.

4.2.1 Plantation Harvesting

Final harvest in these forests involves a clearfalling operation with mechanised equipment, which reduces labour costs and allows high throughput. A typical plantation harvesting operation can process 235 m^3 per day at a cost of about \$23/m^3 (DPI 1998). The State's hoop pine plantations are likely to be above average cost because terrain often limits tree felling to manual chainsaw crews and sometimes requires an overhead cable system, known as a skyline, to remove logs from the forest.

The geographic concentration of Queensland's plantation resource has led to the emergence of a small number of large plantation harvesting businesses. Through coordinating their activities they have achieved greater machine utilisation and productivity, which is important given the large capital costs of their equipment.

4.2.2 Native Forest Harvesting

Management objectives for publicly owned native forests prescribe that harvesting contractors leave habitat trees, protective buffer strips around streams and vigorous advanced growth for the next cutting cycle. The diversity of species, size and terrain in native forests requires more versatile equipment that is usually much less sophisticated. This results in a more labour intensive, higher cost operation with lower throughput than the plantation harvesters can achieve. Calculations by DPI–Forestry (DPI 1998) suggest that total harvesting costs and throughput volume for a typical native timber harvesting operation is in the order of \$33/m^3 and 35 m^3/day respectively.

Since native forest harvesting is more dispersed, involves smaller log volumes and more variable operating conditions, opportunities for large scale specialisation to improve efficiency are limited.

4.3 PRIMARY PROCESSING SECTOR

There are approximately 390 licensed primary processing plants in Queensland, including around 120 in SEQ. Many of these may operate infrequently.

This sector, while not homogenous, is essentially involved in transforming the raw log into a saleable final or intermediate output. Key activities of primary processors include sawing,

veneering, or chipping and pulping of the wood fibre. Outputs include structural timbers, panelling, flooring, plywood, particleboard, medium density fibreboard (MDF), woodchips and pulp.

Primary processors are typically located close to their timber resource to avoid high transportation costs. Transport cost is especially significant for the hardwood timber industry, since the recovery rate of sawn product is 34 per cent on average and the utilisation of residue is variable (Bull *et. al.* 1998). Because of the uniformity, fewer timber defects and the better market for residues, waste is less of an issue for plantation sawlog processors (DPI 1998). Bull *et. al.* (1998) estimate that the recovery rate of plantation processors in SEQ is 47 per cent on average, although this is as high as 80 per cent for some.

The majority of forest product manufacturing establishments (including secondary processors) are small, with 65.2 per cent employing fewer than 20 persons, and together employing in total only 37 per cent of total employees in the industry. In contrast, 2.1 per cent of establishments employ 100 or more persons and account for 27.6 per cent of all employees in the industry (ABS 1994 cited in Consultancy Bureau 1997). The employment details of the industry are described in more detail in chapter 6.

The primary processing sector can be classified into fixed sawmills, mobile sawmills and plants producing reconstituted products. Table 4.1 displays the distribution of these firms by statistical division for the State. An estimate of the number of licensed primary processing enterprises in and/or processing timber from SEQ is presented in table 4.2. Further details on this sector can be found in Bull *et. al.* (1998).

4.3.1 Fixed Sawmills

These establishments account for nearly all of the 120 licensed primary processing plants in SEQ and convert logs into sawn timber. In some mills further processing is undertaken, for example, drying, seasoning, or chemical treating to improve strength and durability. The majority of these establishments in SEQ are sawing native timber (about 90), while approximately 30 are processing only plantation timber. There are approximately five mills processing both native and plantation timber.

Despite being greatly outnumbered by hardwood sawmills, the softwood mills process much greater quantities of sawn timber. Like the harvesting segment of the industry, the differences in technology applied to native and plantation timber processing almost allows them to be considered as two separate industries.

Plantation timber fixed processors

Plantation softwood processing is usually done in large, capital intensive operations with a considerable amount of ‘high tech’ equipment and producing a wide range of outputs (DPI 1998). While accounting for only 12 per cent of fixed sawmills, they processed 60 per cent of the 1 600 000 m^3 of log input processed by fixed operations throughout the State in 1993–94 (DPI 1998).

Native timber fixed processors

In contrast, mills processing native forest resources are usually much smaller, more labour intensive operations with older and less efficient equipment. The average native timber fixed sawmill processes one eighth of the volume of the average plantation fixed sawmill (DPI 1998).

Traditionally, this sector has processed timber for nearby local markets, although interest in differentiating produce for interstate and overseas markets is rising.

The disparity with plantation based sawmills can be largely explained by the fact that native forests produce a far more variable product, are less intensively managed, less productive, and more geographically dispersed. Therefore, there is less timber within an economic haul distance of any mill, compared to a plantation mill. According to industry, relatively low investment in the native timber processing industry is a result of future raw material supply uncertainties.

Table 4.1 Licensed Primary Processing and Reconstituted Timber Product Operations in Queensland (1993–94)

	Fixed location sawmills						Reconstituted timber product operations						Mobile sawmills						
	General hardwood	General softwood	Mixed hardwood and softwood	Cypress	Scrub woods	Total fixed location sawmills	Hardboard	Medium density fibre board	Particle board: softwood	Plywood	Woodwool	Total processing plants	Mobile cypress pine	Mobile hardwood	Mobile softwood	Mobile HDW + SWD	Mobile scrub woods	Total mobile sawmills	Total licensed primary processors
Wide Bay-Burnett	37	10	4		2	53		1	1			2							55
Brisbane	17	5	1		1	24	1			3		4							28
Darling Downs	22	8		37		67													67
Moreton	29	5	3	1	1	38				1	1	2							41
South West	1			19		20													20
Fiztroy	21	2	2	3		28													28
Far North	1		2		19	22													22
Mackay	5		4		5	14													14
Northern	3	2	2			7													7
North West																			
Not spatially identified													21	69	2	2	20	114	114
State total	136	32	18	60	28	274	1	1	1	4	1	8	21	69	2	2	20	114	396

Source: DPI (1998)

Table 4.2 Location of Current Licensed Primary Processors in SEQ (1998)

Forestry district	Number of licensed primary processors
Beerburrum	52
Imbil	5
Maryborough	26
Monto	13
Yarraman	18
Rockhampton	5
Not defined	1
Total	***120***

Source: Derived from DPI–Forestry coverage of sawmill locations (1996 to 1998)

4.3.2 Mobile Sawmills

These are sawmills that can be periodically moved from one site to another and represent the second most common type of primary processing plant. There are 114 licensed operators in Queensland. DPI (1998) reports that 110 mobile mills cut native timber, with most (69) relying on Queensland's hardwood forests.

Mobile sawmills have accounted for almost all of the growth in the number of licensed sawmills in recent years. They are designed to economically cut small volumes of timber from scattered locations and are suited to the less productive native forests. Mobile sawmill operations are very flexible with many mills only operating on a part time basis when there is sufficient demand.

4.4 SECONDARY PROCESSING

This is often the final stage in the production value adding chain for forest products and involves transforming the output from primary processors into final products. Activities in this segment range from large scale capital intensive operations using a number of processes to manufacture products like prefabricated roof trusses, strip flooring and furniture, to relatively small scale establishments such as joineries using labour intensive processes to produce items like kitchen cupboards and wooden containers.

Reconstituted timber product operations are a significant segment of the secondary–processing sector and are entirely located within SEQ. This segment consists of four plywood producers, one hardboard, one medium density fibreboard (MDF), one particleboard and one woodwool manufacturer. These plants are characterised by automated facilities involving large capital outlays and requiring high throughput. Most of these operations use softwood as their major input, although the hardboard plant relies on native hardwood. These plants processed around 305 000 m^3 of log input in 1993–94, however, given that in some cases sawmill residues make up most of the inputs, using the log input data alone will understate the magnitude of these operations (DPI 1998).

Production of paper and paper products would also usually be included in the secondary processing segment. However, their activities are not considered here because the Queensland firms in this category use recycled paper and imported pulp.

A more detailed discussion of this sector of the forest industry can be found in Margules Poyry (1998).

5.0 THE QUEENSLAND TIMBER INDUSTRY IN ITS NATIONAL AND INTERNATIONAL CONTEXT

This chapter has been summarised from the Consultancy Bureau Pty Ltd's (1997) report.

5.1 THE FOREST INDUSTRY IN ITS NATIONAL CONTEXT

Queensland's forests currently supply approximately 70 per cent of the sawn timber consumed in the State each year, with the remainder sourced from interstate and overseas. The State processes approximately 25 per cent of the coniferous sawn wood produced in Australia. Queensland contributes around 20 per cent of total broadleaved sawnwood production to the nation, and produces almost all the sawnwood of tropical cabinet timbers in Australia. While tropical cabinet woods are high value products, they constitute a very small percentage of the overall cut.

Queensland contributed about seven per cent of the national reported volume of overseas exports of forest produce in the 1993–95 period. As with other states, the majority of these exports were woodchips, although by comparison, Queensland's woodchip export industry is small. Queensland's share of roundwood and board product exports is however relatively large at 19 per cent and 32 per cent of the national total, respectively.

5.2 THE FOREST INDUSTRY IN ITS INTERNATIONAL CONTEXT

5.2.1 Australia Generally

Australia is a net importer of forest products, with major suppliers North America, New Zealand and South East Asia, particularly Malaysia. Over the past five years, New Zealand sourced imports have increased to compensate for the reduction in the supply from North America. Australia's trade deficit was almost $2 billion in 1994–95 and Australia cannot achieve self sufficiency in forest products in the near future.

In terms of overall trade volume (based on roundwood equivalents) the deficit is far less imbalanced (6.8 million cubic metres exported, compared with imports of 7.6 million cubic metres). The significant difference between value and volume is attributable to the import of value added pulp

and paper products, while woodchips comprise the bulk of exports (Neck *et. al.* 1996 cited in Consultancy Bureau 1997).

Australia is a relatively small contributor to world exports, except in relation to the export of woodchips, where despite having only one per cent of the world's wood resource, Australia ranks as the second largest woodchip exporter behind the USA. In 1992 it was estimated that Australia produced 23.6 per cent of the world's export chip. Australia is the largest supplier of hardwood chips to the Japanese market, accounting for 39 per cent of total Japanese demand. Roundwood accounts for 85 per cent of Australian woodchips, the balance being sawmill residues.

5.2.2 Queensland Specifically

Queensland is a net importer of forest products with a trade deficit of about $287 million, or 13 per cent of the national forest products deficit in 1994–95. Paper and paperboard products accounted for $160 million of the Queensland deficit, which is understandable given the limited capacity to manufacture these products locally.

In 1996–97, total exports of the Queensland timber industry represented less than 0.8 per cent of Queensland's total export revenue (Queensland Treasury 1997). Queensland exported about $70 million in forest products to overseas markets in 1994–95, of which 40 per cent was woodchip sourced from plantations. Paperboard and board products (such as MDF and plywood) are also exported from Queensland.

The State is currently a small player in world markets for forest products and overseas buyers tend to view Queensland timber as a source of 'gap-filling' to meet short term fluctuations in demand. This results in fairly volatile export prices and volumes. Nevertheless, the value of exports from Queensland has risen by over 500 per cent since 1988–89. Plantation woodchip accounted for almost half of this rise, with packaging, industrial paper and roundwood also making solid contributions to this export growth.

6.0 SOCIO-ECONOMIC IMPORTANCE OF THE TIMBER INDUSTRY

6.1 DIRECT CONTRIBUTION OF THE TIMBER INDUSTRY

6.1.1 Derivation of the Employment and Industry Gross Product Data

The employment and industry gross product[6] (IGP) data presented in table 6.1 is summarised from the Australian Bureau of Statistics (ABS) reports 1996–97 Manufacturing Industry Queensland and the 1996 Census of Population and Housing. The notes accompanying the table indicate which Australian and New Zealand Standard Industrial Classification (ANZSIC) codes have been used.

At the Queensland level, employment and IGP in the primary and secondary processing sectors was summarised from the 1996–97 Manufacturing Industry Queensland report. The most recent data on the Forest Management, Harvesting and Transport sectors was available from the 1996 Census of Population and Housing, however, there was no estimate of IGP for these sectors.

The fact that the SEQ RFA boundary is inconsistent with existing administrative and statistical boundaries presents difficulties for employment estimation. To minimise inaccuracies from using statistical areas that overhang the SEQ RFA region, ABS data was disaggregated to the greatest extent feasible (down to Statistical Local Areas) when compiling the employment data. Unfortunately, employment data for the primary and secondary processing sectors was not available from the ABS 1996–97 Manufacturing Industry Queensland report at this disaggregated level. Consequently, the 1996 Census of Population and Housing was used to derive the employment figures for these sectors. For consistency, employment in the forest management, harvesting and transport sectors for SEQ was also taken from this publication.

The diverse nature of the secondary processing sector presents some difficulty in defining its extent. Note ❸ accompanying table 6.1 defines the sector in terms of ABS ANZSIC codes for the purposes of this report. This differs from DPI (1998) who also include ABS ANZSIC code 2921 *Wooden Furniture and Upholstered Seat Manufacturing* in their definition of the secondary processing sector. In 1996–97, the industries defined under ANZSIC code *Wooden Furniture and Upholstered Seat Manufacturing* employed 5 993 people throughout Queensland, however, the extent to which

[6] Industry gross product is very similar to the national accounting measure gross product at factor cost, which is the official statistical measure of production. IGP for an industry is a measure of the value which is added by the industry's production process to the raw materials and services which are input to those processes.

this industry segment draws upon the Queensland timber resource is unknown and therefore it has been excluded from the secondary processing sector presented in table 6.1.

Table 6.1 Employment and industry gross product of the Queensland Forest Industry by Sector

Industry sector	Queensland employment (persons)	SEQ employment (persons)	% of sector employed in SEQ	Industry gross product ($m)*
Forest management, harvesting and transport❶	2 059**	1 449**	70.37	Not available
Primary processing (Milling)❷	2 993*	2 235**	74.67	135.7
Secondary processing❸	5 695*	4 736**	83.16	233.6
Total	***10 747***	***8 420***	***78.35***	***369.3***†

❶ Consists of ABS ANZSIC Codes 0301 *forestry*; 0302 *logging*; 0303 *services to forestry*; and 0300 *forestry and logging undef.*

❷Consists of ABS ANZSIC Codes 2311 *Log Sawmilling*, 2312 *Wood Chipping*, 2313 *Timber Re-sawing and Dressing*, and 2310 *Log Sawmilling and Timber Dressing udf.*

❸Consists of ABS ANZSIC Codes 2321 *Plywood and Veneer Manufacturing*, 2322 *Fabricated Wood Manufacturing*, 2323 *Wooden Structural Component Manufacturing*, and 2329 *Wood Product Manufacturing, n.e.c.*

* Sourced from ABS 1996–97 Manufacturing Industry Queensland

**Sourced from ABS 1996 Census of Population and Housing

†This total excludes the contributions of forest Management, Harvesting and Transport since no estimate for these sectors were available.

6.1.2 Timber Industry Employment and Output in Queensland

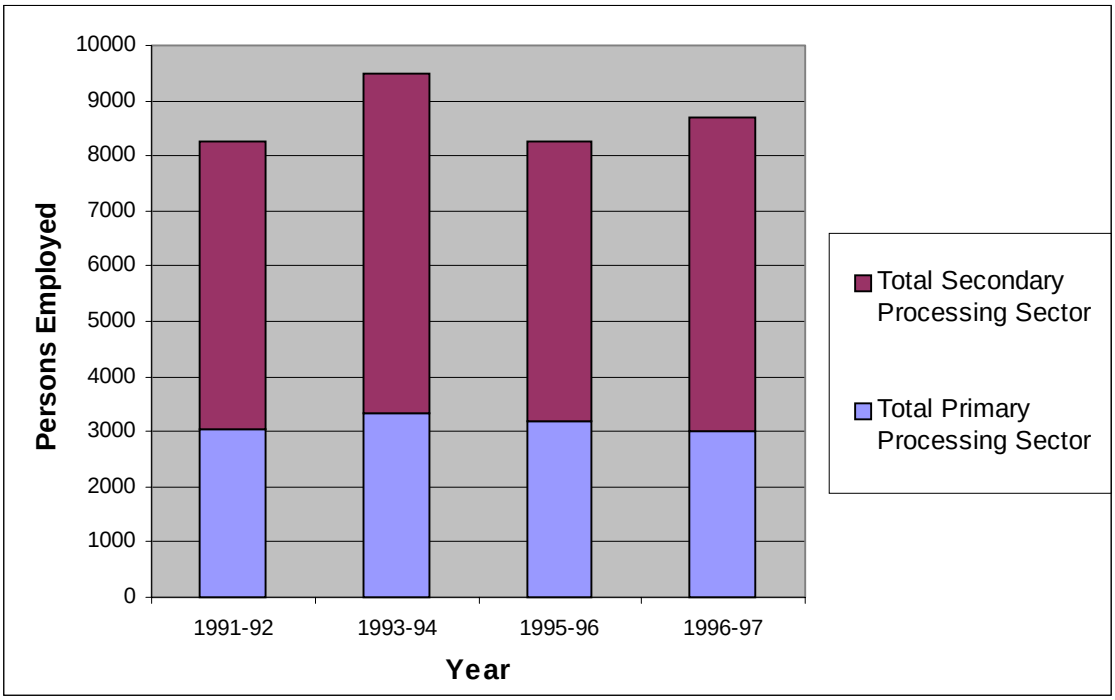
Table 6.1 presents the direct employment and IGP of the forest industry. ABS data confirms that the primary and secondary processing sectors of the Queensland timber industry together contributed about six per cent and four per cent of the Queensland total manufacturing industry employment and IGP respectively in 1996–97.

At the State level, the available employment data for each of the industry sectors does not facilitate its segregation according to whether they are involved in managing, harvesting or processing the native or plantation forests on private or publicly owned land. This has been attempted for the primary processing sector for SEQ below.

The secondary processing sector dominates the timber industry's contribution to the State economy in IGP and employment terms, being 63 per cent and 53 per cent of the totals respectively. The primary processing sector is the second most important employing around 3 000 people throughout Queensland, with an IGP of $130 million. Figure 6.1 shows that while the levels of employment in the primary and secondary processing industries has fluctuated over the last five years, the trend indicates a total timber manufacturing workforce of around 8 500.

While not as significant in employment and output, the forest management and harvesting sector contributes to the economy in many other, less quantifiable ways. These include construction and maintenance of roads, and prevention and control of fires. The information presented includes the number of people involved in managing the private forest resource.

Figure 6.1 Primary and Secondary Processing Employment in Queensland for Selected Years (1991–92 to 1996–97)

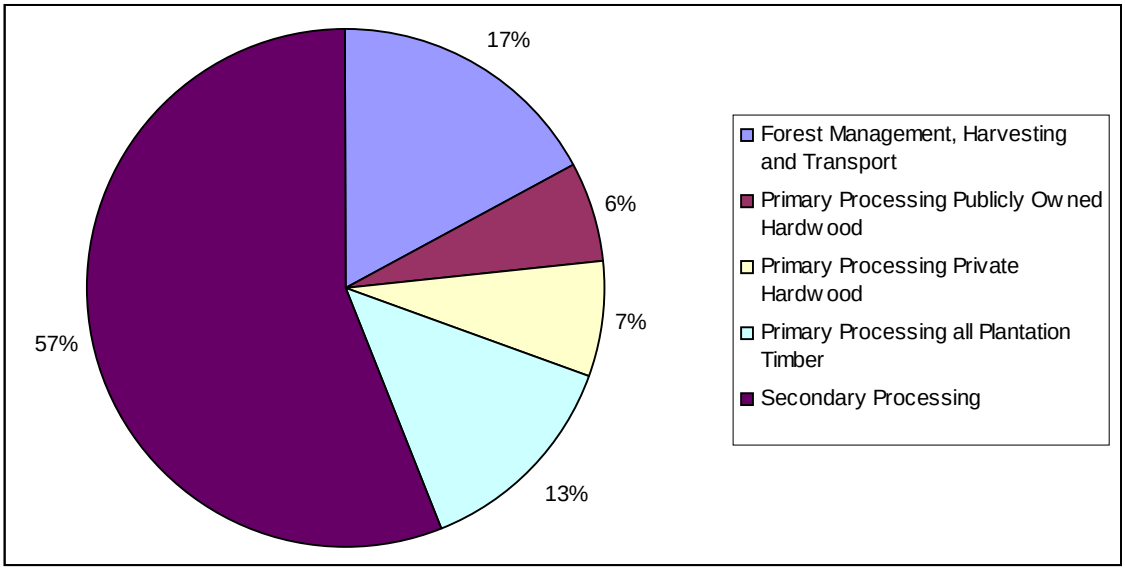


Source: ABS Manufacturing Industry Queensland 1991–92, 1993–94, 1995–96 and 1996–97.

6.1.3 Timber Industry Employment and Output in SEQ

SEQ is the hub of Queensland's timber industry with 78 per cent of the total industry employment, including 83 per cent of the secondary processing jobs. Figure 6.2 presents the proportional contribution of each timber industry sector to employment in SEQ. The primary processing sector has been disaggregated to the extent possible.

Figure 6.2 Proportion of Timber Industry Employment in SEQ by Sector (1996)



Source: ABS reports 1996–97 Manufacturing Industry Queensland and 1996 Census of Population and Housing for total employment in each sector. CRA (1998c) and Bull *et. al.* (1998) for disaggregation of the primary processing sector.

Brisbane, Pine Rivers Shire, Ipswich, Logan and the Gold Coast (hereafter referred to as 'the major centres') are home to most of the secondary processing employment in SEQ with only 23 per cent (1 093 jobs) outside of these centres. It was not possible to breakdown the secondary processing sector according to whether employees are involved in the processing of native or plantation timber sourced from publicly owned or private land.

There were 38 primary processors in SEQ with a publicly owned hardwood forest allocation in 1998 and three others that have processed publicly owned native timbers over the period 1992–93 to 1996–97, probably obtained through competitive sales or transfers from other mills. From this total of 41, the DPI–Forestry quarterly sawmill returns indicate that around 39 have also processed private native timber between 1992–93 and 1996–97. In total, the hardwood sawmilling sector currently employs approximately 1 135 workers. The mills with a hardwood allocation employ a total of 872 people. On the proportion of publicly owned sawlog throughput basis, the publicly owned resource supports approximately 510 of these employees (CRA 1998c).

There are approximately 47 sawmills that process private native timber only[7]. No SEQ RFA project report has examined employment in these mills, however approximately 263 employees work in these mills. When added to that proportion of mill employees from sawmills with publicly owned hardwood allocations who are assumed not to be processing the publicly owned resource, a total of 625 private hardwood timber mill workers is obtained.

Bull *et. al.* (1998) places the gross value of production of the hardwood sawmilling industry in SEQ at almost $100 million ($22 million gross operating surplus), or approximately 88 per cent of the State hardwood total in 1995–96[8].

Plantation timber is processed by 29 licensed primary processors in SEQ, including 24 that operate exclusively with plantation timber and five that process or have processed native forest timber. There are approximately five mills processing the private plantation resource, while the remainder obtain all of their supplies from the publicly owned plantation estate[7]. In total, plantation mills employed around 1 100 mill workers and had a gross value of production of around $210 million ($67 million gross operating surplus) in 1995–96 (Bull *et. al.* 1998)[8]. A lack of information meant it was not possible to segregate plantation sawmill employment on a proportional basis as was conducted for the hardwood sector above.

In contrast to the secondary processing sector, the majority (70 per cent) of jobs in the primary processing sector are outside of the major centres. For example, Cooloola Shire (including Gympie), Maryborough, and Caboolture Shire were home to 331, 323, and 161 sawmill employees respectively in 1996 (ABS 1996 Census of Population and Housing).

The forest management, harvesting and transport sectors of SEQ also comprise a large proportion (70 per cent) of the State's total employees in those sectors. Of the 1 449 employees in SEQ, 59 per cent reside outside of the major centres. There are no data available that would facilitate a breakdown of these two sectors along the lines of publicly owned versus private and native versus plantation timber.

[7] This information has been summarised from DPI–Forestry's Sawmill Quarterly Returns database

[8] Note that this measure is different from IGP data.

6.1.4 Contribution to regional economies

DPI (1998) suggests that the contribution of the forest products industry to the decentralisation of economic activity in the State is substantial. In many rural areas, forest industries are one of the principal sources of employment. In addition, the location of plantation forests proximate to the regional consumption centres of the State also contributes to the development of regional areas. While table 6.1 provides a summary of the industry's importance in SEQ, it cannot capture the economic and social dependencies of small communities across the region. CRA (1998c) presents community level assessments for SEQ.

6.2 INDIRECT CONTRIBUTION OF THE TIMBER INDUSTRY

Since non-timber inputs to the industry are outputs of other industries, and some of the earnings of timber industry employees would be spent on goods and services provided by other industries, an economic overview must also account for these indirect impacts. Such complex relationships may be quantified using input-output tables and economic multipliers, which permit estimation of the level of flow on activity to other sectors of the economy that can be linked to the timber industry. Multipliers for the Queensland forest industry in 1993–94 have been reported in DPI (1998).

The overall importance of the forest industry to the Queensland economy can be calculated by summing the direct and flow on indirect impacts. These suggest that about 8.6 jobs are created in other parts of the economy for every 10 timber industry jobs in Queensland (DPI 1998). The rate is less than the State average in SEQ where about 7.6 per 10 timber industry jobs are generated. DPI (1998) also indicates that for every dollar spent in the forest industry, an additional 94 cents of gross output in other sectors of the State economy can be traced back to the forest industry. When indirect impacts are accounted for, these figures suggest that the total contribution of the timber industry to the State economy should be nearly double the direct contribution. However, it is important to understand that this analysis does not mean that all of the indirect economic activity would disappear if the forest industry ceased to exist.

Furthermore, calculations by DPI–Forestry indicate that every dollar of log resource can be linked to a further $10 of economic activity elsewhere in the State (DPI 1998). As in the previous section, lack of information precludes a more detailed study of the timber industry by publicly owned versus private and native versus plantation timber. The difficulty in defining the secondary processing sector must again be highlighted as a limitation of the reliability of this description of the industry.

The SEQ RFA project report SE2.4b *Regional Economic Analysis* (CRA 1998d) will define the timber industry secondary processing linkages more accurately than was possible here.

7.0 CONCLUSION

Historically, Queensland forest management philosophies might be classified into three stages: prior to legislation for reservation of State forests and national parks (1824–1906); reservation for production forestry (1906–1960s); and reservation for preservation (1960s to present). Until about 50 years ago, forestry found itself at odds with the populace because of the notion that conserving forests was adversely affecting the wealth of the State. Since the 1960s, public opinion has reversed and the forest industry has been accused of inadequately conserving native forests. While it seems that forestry in Queensland has always had an image problem, the industry today retains a prominent role in the management of the State's forest resource and contributes significantly to the livelihood of many Queenslanders.

The Queensland forest industry is currently facing pressures for change. The native forest resource is not capable of supplying industry with the volumes it once did, with current hardwood sawlog volumes barely one third of the post World War II high. Publicly owned forests have, and are likely to continue to be subject to increasingly stringent harvesting controls and regulations that further diminish their yield of timber, at least in the medium term.

The forests of South East Queensland are the focus of the timber industry in Queensland, contributing 75 per cent of the total publicly and privately owned native and plantation sawlog volume processed in Queensland during 1996–97. This includes almost all the plantation cut and 66 per cent of the total hardwood cut from publicly owned and private land. In addition, the industry was responsible for 8 420 jobs within South-East Queensland in 1996–97, and throughout the State contributed $370 million in industry gross product. While it is likely that the native forest hardwood sector of the industry will decline further in the next millennium, this loss to industry may be ameliorated if Queensland can generate the public and private support necessary to contribute to the objectives set forth by the *Plantations for Australia 2020 Vision* report.

APPENDICES

Appendix 1.1 Project Specifications

PROJECT NAME: **Timber industry background paper and situation analysis**

PROJECT IDENTIFIER: **SE 2.5**

LOCATION/EXTENT: **South-East Queensland biogeographic zone**

ORGANISATION/S: **DNR, ABARE, DPI**

CONTACT OFFICERS: **DNR: George Antony (J.R. Peter Hardman until 8/4/97),** ***Resource Economist***
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LINKAGES/DEPENDENCIES:
This project and project SE 2.4: *Regional significance of the timber industry* supply critical information for the Resources and Economics Assessment Report.

TYPE OF STUDY: **Economic**

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1. **OBJECTIVES OF THE PROJECT**

To describe the background, current situation and trends in the forest timber industry within SEQ, with particular emphasis on measures of the industry's size, production and value, and an indication of the impediments to further industry development.

2. BACKGROUND

Provides data required by analytical projects.

3. SCOPE OF THE PROJECT

- An overview of Queensland's forest industry including size, composition, impact and relationships both within industry, with other industries and with the government.
- To address both the plantation and native forest sectors of the industry.
- To place Queensland's forest industry in its national and international context.
- To analyse current and obvious future economic, environmental, production, processing, marketing and regulatory issues confronting the industry overall, and in each major sector of the industry.
- To develop likely future scenarios for each major market segment based on best available current information.

4. METHODOLOGY

- Discussion with industry peak bodies and individual industry players regarding items such as industry activity, employment, sector outlook.
- Discussion with DPI and DNR specialists on items such as land tenure, licensing arrangements, production,
- Searching DPI–Forestry, DNR, ABARE, BRS and industry data sources for production data, value of production, employment. etc.
- Review of available literature on various features of the Timber Industry in SEQ.

5. CRITICAL PATH

Outcomes/outputs

- Statewide economic models for the timber industry.
- Background report and situation analysis on timber industry covering the following:
  - general description of the industry
  - evaluation of the importance of various land tenures
  - licensing arrangements
  - regionalisation/subdivisions of the resource and the industry
  - measures of activity and value of production
  - employment
  - existing and potential further processing
  - flow-on effects to other industries
  - trends and sector outlook (by region?)
  - indication of possible implications of CAR reserve design.
- Timber Industry chapter for CRA assessment report summarising the above.

Reporting

Progress reports will be submitted at monthly intervals.

Milestones

Milestones, Timetable and Task dependencies (to be finalised as at later date)

Task/description	*Duration (weeks/ day)*	*Earliest/ actual start*	*Actual finish*	*Task dependencies diagram*	*Who*	*Link to Payment Yes/No Amount*
Data collection	?	?	?		DNR/DPI	
Analyse data	?	?	?		DNR/DPI	
Write report	?	?	?		DNR/DPI	

6. BUDGET DETAILS

	Cash ($)	In kind ($)	Total ($)
Commonwealth	0	0	0
Queensland	0	25,000	25,000
Total		**25,000**	**25,000**

No external payments are anticipated.

7. PAYMENT DETAILS

NA

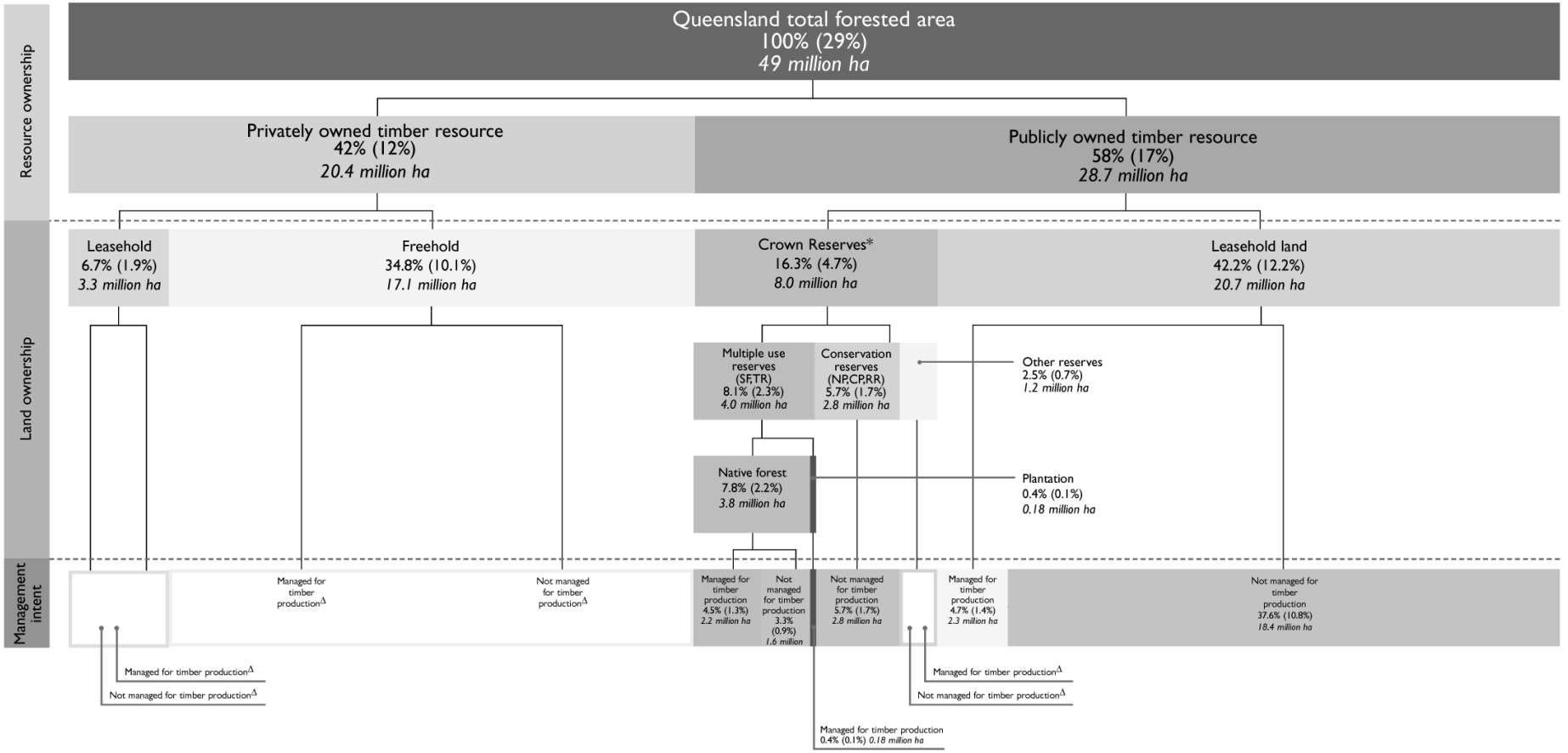
8. PERFORMANCE INDICATORS

Question	Y/N	Comment
Are the project outcomes usable?	Y	
Is there an improvement in extent and quality of existing info?	Y	
Was the project completed in a timely manner?		Post project assessment
Were the funds properly acquitted?		Post project assessment
Is the information able to be easily incorporated?	Y	

9. QUALITY CONTROL

The execution of the project is subject to peer review through regular meetings of the DNR project team, constant liaison with our Federal counterparts, and inter agency discussions in Queensland as required.

Appendix 3.1 Forested Area: Land Use, Resource Ownership and Management Intent (DPI 1998)



Explanatory notes

- Numbers in italics are areas (rounded).
- SF = State Forest, TR = Timber Reserve, NP = National Park, CP = Conservation Park.
- The first % for each category refers to the percentage of the total Queensland forest area. The second % (in brackets) is the percentage of total Queensland land area.
- The term forest refers to tree or mallee formation greater than 2 metres tall and with at least 20% crown cover.

Δ Accurate information is not known.
* Includes vacant Crown land.
Source: Commonwealth of Australia (1997) and DPI Forestry estimates.

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