TOWARDS A SOUTH EAST QUEENSLAND REGIONAL FOREST AGREEMENT

A DIRECTIONS REPORT

14 May 1999

Disclaimer

The views and opinions expressed in this report do not necessarily reflect the views of the Queensland and Commonwealth governments. The Queensland and Commonwealth governments do not accept responsibility for any advice or information in relation to this material.

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FOREWORD

This Directions Report has been prepared by the Commonwealth and Queensland governments to facilitate stakeholder and community involvement in developing a Regional Forest Agreement (RFA) for South East Queensland (SEQ).

Such an agreement would provide a blueprint for future sustainable forest management and form the basis of an internationally competitive and ecologically sustainable forest products industry. It would also provide for a world class national, comprehensive, adequate and representative reserve system and clearly identify those forests available for multiple use. As an RFA would be put in place by the Commonwealth and Queensland governments for 20 years, a South East Queensland RFA would provide the policy stability that is essential for investor and community confidence in the future of our forest based industries and the communities that depend on them. At the same time, it would also ensure the protection of the unique environmental and heritage values of our forest estate.

This Directions Report builds on information gained in the Comprehensive Regional Assessment (CRA) released on 18 March 1999. It outlines the current situation for South East Queensland's forests and forest based industries and presents a range of possible forest management scenarios to encourage community debate on the many complex issues that they raise.

No scenario in this report represents the position of either the Commonwealth or Queensland governments.

Release of this Report marks the beginning of around six weeks for public comment. This Report and the South East Queensland Comprehensive Regional Assessment provide information to assist interest groups, industry, communities and individuals to put their views forward about the future management of South East Queensland forests.

Written submissions should be sent before 21 June 1999 to:

South East Queensland RFA
CRA Unit
Department of Natural Resources
PO Box 1008
INDOOROOPILLY QLD 4068

Commonwealth and State governments will take these submissions into account in negotiation of a South East Queensland Regional Forest Agreement.

CHAPTER 1: INTRODUCTION

1.1 This Report and How to Respond to it

During 1997 and 1998, Commonwealth and Queensland governments conducted a comprehensive assessment of the full range of social, economic, environment and heritage values in the South East Queensland (SEQ) forest estate, making available the best information ever collected about the region's forests. This information has been systematically compiled in the recently released Comprehensive Regional Assessment (CRA), as well as in the reports of specific projects that formed part of the assessment. The Comprehensive Regional Assessment Report is available in public libraries throughout the SEQ region and on request from the Queensland Department of Natural Resources (phone: 1800 240 691). It and the technical reports are also available on the Internet at http://www.rfa.gov.au**.**

Information gained through the CRA process has been integrated to develop a range of possible approaches (illustrated by the indicative scenarios presented in this Report at Chapter 6).

Along with the CRA, this Directions Report summarises the current situation in South East Queensland, and as a basis for public comment, presents a range of indicative scenarios illustrating issues that arise in developing a possible Regional Forest Agreement.

It does not in any way pre-empt government decisions about the outcome of the RFA process in South East Queensland. No scenario in this report represents the views of either the Commonwealth or the Queensland governments.

This Report is being released by the Commonwealth and Queensland governments for about six weeks of public comment. If you, your organisation or community wish to express your views on any of the issues raised in this report, you should write before 21 June to the address set out in the Foreword to this Report.

1.2 Structure of the Report

This report is divided into seven chapters. This first chapter briefly outlines the purpose of and background to the RFA process and sets out public comment arrangements. It also presents the policy basis for RFAs.

Chapter 2 describes the SEQ RFA region, including economic, social, environment and heritage aspects and indigenous issues. It also briefly reviews the existing Commonwealth and State forest policy framework.

Chapter 3 discusses a number of strategic considerations which could affect a SEQ RFA, including Ecologically Sustainable Forest Management (ESFM), public and private native forest issues, application of the nationally agreed JANIS reserve criteria, and the potential for future forest industry development.

Chapter 4 sets out the components of a SEQ RFA, including an overview a Comprehensive, Adequate, and Representative (CAR) reserve design, of other (non-timber) forest activities and of social impact.

Chapter 5 summarises the baseline situation (the situation that would be likely in the absence of an RFA).

Chapter 6 presents a range of indicative scenarios and shows how a particular approach might affect the RFA's ability to achieve particular objectives.

Chapter 7 discusses how a SEQ RFA might be achieved and considers future ecologically sustainable forest management issues, and possible monitoring, reporting, and review procedures.

1.3 Regional Forest Agreements and their Context

1.3.1 RFA Policy and Legislative Framework

Regional Forest Agreements recognise that Commonwealth and State governments have a range of obligations and interests relating to the protection of forest values and to the sustainable use and development of forest resources. RFAs are designed to reduce uncertainty, duplication and fragmentation of decision making to meet these obligations through a durable agreement on the management and use of forests. This facilitates timely land use planning and development decisions while protecting environmental, heritage and cultural values and providing industry with secure access to forest resources. Greater certainty for industry is an essential basis for investment in downstream processing and value-adding manufacturing, and for stimulating regional economic development and employment.

RFAs are a mechanism for the Commonwealth and a State government to reach agreement on the long-term management and use of forests in a particular region.

1.3.2 National Forest Policy Statement

The Regional Forest Agreement process is outlined in the National Forest Policy Statement (NFPS), developed in 1992 and agreed to by the Commonwealth, State and Territory governments. The Statement sets out eleven broad national goals including:

- conservation – to maintain an extensive and permanent native forest estate in Australia and to manage that estate in an ecologically sustainable manner
- wood production and industry development – to develop internationally competitive and ecologically sustainable wood production and wood product industries based on maximising value-adding opportunities and efficient use of wood resources
- plantations – to expand Australia's commercial plantations of softwoods and hardwoods to provide an additional, economically-viable, reliable and high quality wood resource for industry
- employment, workforce, education and training – to expand employment opportunities and the skills base of people working in forest management and forest based industries.

The Statement also outlined a national basis for long-term resolution of the requirements of conservation and industry. Joint Commonwealth-State Comprehensive Regional Assessments of the environmental, heritage, social and economic values of Australia's forests would be undertaken as the basis for negotiation of a Regional Forest Agreement between the Commonwealth and relevant State governments.

The NFPS is available on the Internet at http://www.rfa.gov.au/nfps/contents.html.

1.3.3 Nationally Agreed Reserve Criteria

The National Forest Policy Statement includes a commitment to the development of a comprehensive, adequate and representative reserve system, and implementation of strategies to protect old growth forests and wilderness as part of that reserve system.

Governments agreed to the development of National Forest Reserve Criteria to guide the establishment of the Comprehensive, Adequate, and Representative reserve system. These criteria were endorsed by both the Australian and New Zealand Environment and Conservation Council (ANZECC), and by the Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA) and are known as the JANIS criteria.

The JANIS criteria are applicable to all forests and associated woodlands, within each region for which an RFA is to be developed. They provide for a comprehensive, adequate and representative forest reserve system comprising:

- a formal reserve network (eg National Parks and conservation parks)
- informal reserves
- values protected by prescription
- mechanisms to protect values on private land.

Nationally agreed criteria have been developed for biodiversity, old growth and wilderness and are to be used in developing a comprehensive, adequate and representative reserve system for forests in Australia. JANIS states that "all reasonable effort should be made to provide for biodiversity and old growth forest conservation and wilderness in the dedicated reserve system on public land". Further details can be found in *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia*. More information on the JANIS criteria can be found on the Internet at http://www.rfa.gov.au/documents/janis/contents.html.

1.3.4 Implications of the Commonwealth *Regional Forest Agreements Bill 1998*

The *Regional Forest Agreements Bill 1998* provides Commonwealth legislative backing for Regional Forest Agreements to be complemented by State legislation (where necessary) and strong wood supply contractual arrangements between industry and State governments. The Bill was introduced into the Commonwealth Parliament in June 1998, lapsed with the 1998 election, and was reintroduced into the House of Representatives by the Minister for Forestry and Conservation on 26 November 1998. It is now to be considered by the Senate.

The Bill provides that an RFA must have had regard to assessments of environmental, endangered species, national estate, world heritage, indigenous heritage, economic and social values. It must provide for a comprehensive, adequate and representative reserve system and for the ecologically sustainable management of the region's forested areas, and its purpose must be to provide long-term stability of forests and forest industries.

The Bill removes certain Commonwealth controls and restrictions used in the past as an indirect means of attempting to control timber harvesting. It provides that the effects of RFA forestry operations will be disregarded for the purposes of specified "trigger" sections of the *Australian Heritage Commission Act 1975*, the *Environment Protection (Impact of Proposals) Act 1974* and its related Administrative Procedures, and the *World Heritage Properties Conservation Act 1983* (described in this report in Section 1.2.5 - Commonwealth Government Obligations*)*. The Bill will prohibit the application of export controls imposed under the *Export Control Act 1982* for processed and unprocessed wood from a region where an RFA is in force. This exemption will extend to plantation wood from the region, if the relevant State's code of practice is approved under *the Export Control (Unprocessed Wood) Regulations*. The Bill also provides additional legislative rigour for RFA termination and compensation provisions.

1.3.5 Commonwealth Government Obligations

(i) Obligations Under Environment Impact Assessment Legislation

The objective of the *Environment Protection (Impact of Proposals) Act 1974* is to ensure, to the greatest extent practicable, that matters affecting the environment to a significant extent are fully examined and taken into account in arriving at Commonwealth Government decisions.

The Commonwealth Government's proposal to enter into a SEQ RFA with Queensland will be referred to the Commonwealth Minister for the Environment, in accordance with the administrative procedures of the *Environment Protection (Impact of Proposals) Act 1974*. These procedures require the Minister to determine

whether preparation and public review of an environmental impact statement or a public environment report are required to satisfy the object of the Act. The Minister is required to provide this advice before an RFA is finalised. The public comment process for the SEQ RFA has been designed to be consistent with the requirements of the Act.

(ii) National Estate Obligations

The Australian Heritage Commission's (AHC) responsibilities, as defined by the *Australian Heritage Commission Act 1975*, include:

- the identification of places with national estate values and the compilation of an inventory of these places (the Register of the National Estate)
- the promotion of the conservation of these values and places
- the provision of advice to Commonwealth Ministers on the effect on the National Estate of proposed actions.

The identification of indicative SEQ national estate places is described in the South East Queensland Comprehensive Regional Assessment (1999). Interim and final listing will take place in accordance with commitments in the RFA, once completed.

The conservation of SEQ national estate values will be achieved through both the protection of national estate places within the comprehensive, adequate and representative reserve system and the incorporation in the RFA of protection principles for national estate values in other forest areas.

Prior to the signature of the RFA, the AHC will provide advice to the Commonwealth Government on the extent to which the RFA may have an effect on the National Estate. This advice will be provided in a regional context, having regard to the levels of protection afforded to national estate values through a range of mechanisms.

(iii) Obligations For Endangered Species Protection

The *Endangered Species Protection Act 1992* (ESP Act) sets out Commonwealth responsibilities for the conservation of endangered and vulnerable species and endangered ecological communities, and for the amelioration of the processes that threaten them. The ESP Act requires that any effect on scheduled species and communities is taken into account in Commonwealth decisions, such as a decision to enter into a RFA. Forest species listed in the ESP Act have been a high priority for the CRA.

Obligations under the legislation include:

- the identification of the occurrence of endangered and vulnerable species and communities and the assessment of their conservation status under present tenures and management practices
- the preparation of recovery plans and threat abatement plans for identified endangered forest species and threatening processes
- the development of appropriate prescriptions and other planning mechanisms
- the identification and assessment of impacts of present and proposed resource uses
- the identification and assessment of impacts of key threatening processes with respect to present and proposed resource use.

Identification and assessment activities undertaken under these obligations are described in the 1999 South East Queensland Comprehensive Regional Assessment.

(iv) World Heritage

Under the World Heritage Convention, Australia has an obligation to identify and assess World Heritage values. A thematic approach has been developed for the RFA process for application in forested areas. An Expert Panel

was convened to identify themes of outstanding universal natural and cultural value relevant to Australia, and to then identify places in forested areas that warrant further investigation for their potential World Heritage value in the context of these themes. A number of sites in Queensland were identified by the Expert Panel as warranting further investigation. Further information is provided in the SEQ CRA report and the *World Heritage Report – Record of the World Heritage Expert Panel Meeting: Western Australia, New South Wales and Queensland*.

The Panel noted that a potential nomination focusing on *Eucalyptus* evolution and diversity would include a series of places across the continent (most expected already to have protected area status) rather than a single contiguous area. The Panel identified several SEQ natural forest areas that could potentially contribute to such a nomination: Commonwealth and Queensland governments are progressing this work.

(v) Native Title

The Commonwealth *Native Title Act 1993* recognises and protects native title and accommodates it within Australian legal and land management systems. Amendments to the Act in 1998 included provisions to reflect the High Court's *Wik* decision that native title may coexist with other interests in land, such as pastoral leases. These amendments also provided for legally-certain Indigenous Land Use Agreements, which may have potential for use in the SEQ region.

1.3.6 Queensland Government Obligations

Forest management is constitutionally a State Government responsibility. The Queensland Government delivers its forest management framework principally through the *Forestry Act 1959* and the *Nature Conservation Act 1992*. A number of other Acts, such as the *Sawmill Licensing Act 1936*, the *Recreation Areas Management Act 1988*, and the *Integrated Planning Act 1997* also affect the forest management framework (see Appendix A).

The *Forestry Act 1959* provides for the management of State forests and timber reserves to provide a range of benefits including timber, water, grazing, minor forest products, recreation, nature conservation. The Act also vests in the State the ownership of forest products on State leasehold land.

The *Nature Conservation Act 1992* provides for the declaration and management of National Parks and other protected areas, and for the protection of Queensland flora and fauna. The Act calls for an integrated and comprehensive nature conservation strategy to be implemented State-wide through information gathering; community education and participation; dedication and declaration of protected areas; ecologically sustainable management of these areas; protection of native wildlife and its habitat; control of use of protected wildlife and areas; recognition of the interest of Aborigines and Torres Strait Islanders and soliciting their co-operative involvement; as well as encouraging the co-operative involvement of landholders. Its nature conservation provisions, which provide for the enlistment of species and critical habitat for protection, cover all tenures.

1.3.7 Queensland Government Forest Management

Queensland's Native Forest Sawlog Allocation System allocates Crown native forest sawlog resources meeting a particular standard (compulsory log), between purchasers (allocation holders - either a sawmill or primary processor) in each allocation zone. (The SEQ region comprises 12 allocation zones wholly or largely, and small parts of other allocation zones[1]). The system aims to achieve sustainable resource use and security of supply of Crown native timber to the milling sector.

Allocation holders' share of the resource is based on the allocation zone's sustainable yield and on the past performance of the allocation holder. Annual allocations and associated arrangements are normally reviewed every five years in the light of available resource information and changes in circumstances.

Harvesting of native forest sawlog resources to fulfil a particular allocation is authorised by a sales permit, which specifies the sale area, the volume of sawlog to be harvested, the period over which harvesting will take place, and the terms and conditions to apply to the sale.

[1] Less than 10% of the Gayndah-Mundubbera and Eidsvold-Monto allocation zones are within the SEQ region.

Native forest sawlog allocations are divisible and fully tradeable, with disposal of Crown sawlogs being the prerogative of the allocation holder. Sawmill operators must comply with the *Sawmill Licensing Act 1936*, including holding sufficient sawmill licence capacity for the allocation.

Approximately 58% of the SEQ Crown native sawlog volume is sold under 20 year supply agreements covering the State forest and timber reserve resource component only (accounting for almost all the SEQ output) and expiring between 2004 and 2007. Supply agreements state that the five year resource allocation review process will continue until the expiry of the agreement.

In line with the National Competition Policy, the Queensland Government is reviewing the *Forestry Act 1959* and has carried out a Public Benefit Test analysis of the Crown 'Sawlog Allocation System'. As part of the review, advertisements called for public submissions in December 1997, a brochure summarising the outcomes of the analysis was distributed to all licensed sawmills, and submissions were reviewed. The analysis found that the deregulation of the system may result in a marginal net economic gain to Queensland: this claim is disputed by the timber industry and is being assessed in the final report to be made to the State Government. RFA outcomes, and the likely unsustainability of present harvesting levels, may affect the quantities and location of future wood supply and may also imply a need for changes to the allocation system.

Successful management of the many values and products found in Queensland's forests requires effective management systems and processes. These include forest use and management planning systems, codes of practice and environmental prescriptions, environmental monitoring and auditing. Management systems and processes should operate for all forested land tenures and be underpinned by appropriate legislation, which recognises ESFM objectives and gives statutory effect to plans and codes of practice (in which considerable progress has been made in recent years).

A Code of Practice for Native Forest Timber Production has been developed and implemented in SEQ in October 1998 for a two year trial. A Code of Practice for Plantation Management has also been produced and is under review by CSIRO.

Continuing work will be necessary to formalise processes so that the Code system is completed for all high impact activities and that the Codes are subject to compliance monitoring and regular review and improvement.

Forest management on freehold lands is not regulated through the Forestry Act, however the *Nature Conservation Act 1992* and the *Integrated Planning Act 1997* both apply across all tenures and cover specific aspects of regulation of forest on private land.

1.3.8 Queensland Government Land Management

The Queensland Government has three distinct land management roles: allocation, direct management and regulation. Land allocation and direct management of the Crown estate must now be undertaken according to the principles of Ecologically Sustainable Development and Ecologically Sustainable Forest Management.

First, the State allocates State-owned resources using tenure-related instruments. Little unallocated land remains in the SEQ region, where most land is freehold, however some term and perpetual leases for grazing, and some tracts of unallocated State land, still exist particularly in the Maryborough district. All lessees are subject to a statutory duty of care for the land. On leasehold land, a permit is required to destroy trees as they remain an asset of the State. These permits are issued in accordance with regional guidelines (specifying retention percentages, conservation of rare species, etc) after certification that the State no longer wishes to retain ownership of the timber on commercial or other grounds.

Second, the State as a landholder directly manages substantial tracts of public land, notably State forests, National parks, unallocated State land, government-owned freehold and reserves for public purposes. Some land can be used for commercial forestry, some for other purposes. The State is required to manage its estate sustainably, to observe a 'good neighbour' policy and to comply with a duty of care which matches the responsibility of private landholders.

Third, the State has a regulatory role. Planning schemes are administered by local government through the *Integrated Planning Act 1997*- the State must certify that each scheme would not adversely affect State interests.

1.4 The South East Queensland RFA Process to Date

The SEQ RFA process began in January 1997 with the signature of a Scoping Agreement by the Prime Minister, Mr Howard, and the then Premier of Queensland, Mr Borbidge. This agreement identified the boundaries of the region, the broad objectives of the proposed RFA and the legal and policy obligations of both governments. A Steering Committee, Reference Panel, associated Technical Committees and an ESFM Expert Panel were also established (lists of members at Appendix B).

An Interim Forest Management Agreement (IFMA) for South East Queensland was signed by the Commonwealth and State governments in April 1998. This agreement, on a similar basis to Deferred Forest Agreements in some other States, aims to ensure continued wood supply to industry and prevent foreclosure of options for a comprehensive, adequate and representative reserve system pending an RFA. Extensions of the IFMA were renegotiated in September and December 1998. The current IFMA expires on 30 June 1999.

Governments have agreed that each RFA should be based on the best possible information about the full range of forest uses and values. This information is provided through CRA analysis of the natural, cultural, social, resource and economic values of the region's forests. A CRA includes detailed assessments of biodiversity, old growth forest, national estate, wilderness, world heritage, social values, forest resources and forest-based industries and communities, and ecologically sustainable forest management.

In SEQ, the CRA assessment comprises more than 30 projects (listed at Appendix C) which drew on local knowledge as well as academic, government and private sector, and community expertise. The projects covered fields as diverse as botany, zoology, mapping and geography to economics, history and social planning. The data resulting from the projects provides a basis for developing a possible RFA.

The SEQ Comprehensive Regional Assessment was released on 18 March 1999. As noted previously, it is available in public libraries throughout the region, on the Internet at http://www.rfa.gov.au, or on request by phoning 1800 240 691.

A two-stage ESFM process conducted by an independent Expert Panel was also undertaken to assess Queensland's forest management systems and planning processes. Further details of the assessment of ESFM in SEQ can be found in Section 3.2 of this Report. Copies of the final ESFM report can be obtained from:

Forest Resources Division, Department of Natural Resources
GPO Box 2454
BRISBANE QLD 4001
Phone: (07) 3234 0145
Fax: (07) 3239 3849

1.5 Consultative Arrangements and Public Comment

A Reference Panel including a wide range of stakeholder interests, as well as Commonwealth and State government representatives, was established to encourage stakeholder participation in the CRA/RFA process in SEQ. The Reference Panel was extensively involved in development, conduct and review of SEQ CRA projects, as well as contributing to the overall operation of the process. Due to time constraints, the Reference Panel was not directly involved in development of the indicative scenarios presented in this report. Both governments would welcome the views of the Reference Panel, and of individual members and their organisations, about this Report.

Release of this Report begins around six weeks for public comment on issues raised by the range of scenarios it presents. This Directions Report, and the South East Queensland CRA, together provide information to assist interest groups, industry, communities and individuals to put their views forward. Commonwealth and State governments will take matters raised in submissions into account in RFA negotiations.

A Forest Recreation Reference Group (FRRG) was convened by the Queensland Minister for Environment and Heritage and Minister for Natural Resources in November 1998 to facilitate recreation user participation in the RFA and subsequent forest planning and management processes. The formation of the FRRG followed Ministerial meetings with active recreational forest users (horse riders, four wheel drivers, motorcyclists and mountain bike riders) concerned that outdoor recreation interests had not been adequately represented in the SEQ

RFA process. These four user groups are represented on FRRG, along with representatives of other recreation users, the conservation movement, local government and relevant State agencies. The Group provides direct advice to the Queensland Minister.

CHAPTER 2: THE SOUTH EAST QUEENSLAND REGION

2.1 General Description

The South East Queensland RFA region covers an area of approximately 6.1m hectares in the south eastern corner of the State, of which about half is covered by forests. It stretches from the NSW border north to Gladstone, and west to Toowoomba, and includes the Blackdown Tableland as an isolated outlyer due to wood supply arrangements and forest type similarities. About 4.3m hectares within the region are privately owned, and 1.8m hectares are held by the State Government.

The region is one of the fastest growing in Australia, with the population of about 2.4m concentrated in the greater metropolitan areas around Greater Brisbane and the Gold and Sunshine Coasts. It is Queensland's premier timber production area. The region also supports a wide range of other forest based industries including agriculture, mining, grazing, beekeeping, recreation and tourism (further detail is set out below).

Substantial areas (about 55%) of native vegetation have been cleared for urban development and agriculture. Forests cover about 44% of the region, with estimates of the region's forested area (including plantations) varying between 2.71m and 3.03m hectares. Native forest distribution includes about 689,000 hectares in State Forest, 358,000 hectares in National Parks and 1,191,000 hectares in freehold. Approximately 159,440 hectares of plantations (mostly exotic *Pinus* and native hoop pine softwood) are in State forest and 15,770 are in freehold.

2.2 Economic and Social Situation

2.2.1 Timber Resource Overview

Sawlogs are the main timber product harvested in SEQ and are the primary basis of the region's timber industry. Recent annual SEQ sawlog production is summarised in Figure 1.

Figure 1: Estimated Recent Annual SEQ Sawlog Production

Ownership	Native forest (m^3)	Plantation (m^3)	Total
Private	210 000	78 900	**288 900**
State owned	85 900[2]	989 800	**1 075 700**
Total	**295 900**	**1 068 700**	**1 364 600**

[2] This figure reflects estimated recent annual volume from the 12 allocation zones that make up the bulk of the SEQ region. Refer to discussion at Section 3.1 of this report.

For the public estate, the recent trends in sawlog production are expected to continue. Plantations will become an increasingly important source of supply – production levels are expected to increase from the current availability of around 990,000m^3 to 1,300,000m^3 by 2010. Sawlog production from the public native forest estate, however, is expected to decline, continuing the trend of the last 20 years.

2.2.2 Forest Industries Overview

South East Queensland is the clear focal point of the Queensland timber industry. Together, products of the Queensland industry's primary and secondary sectors have a gross value in excess of $360m each year. The industry provides over 10,500 jobs, about 80% in the SEQ region.[3]

The July 1998 Mill Survey Report by the Australian Bureau of Agricultural and Resource Economics (ABARE)[4] shows 97 hardwood sawmills operating in SEQ in 1995-96. These mills are distributed widely throughout the region, but cluster around the large processing centres of Maryborough, Gympie, Sunshine Coast and Brisbane. Around half of the mills each process less than 1,000m^3 of harvested logs each year, with throughput for these mills in total comprising only about 5% of the regional total. Conversely, about 15% of mills each process more than 10,000m^3 of logs each year, with their total throughput comprising almost half of the regional total. Total current direct employment in the hardwood timber sector is estimated at about 1290 people, with gross value of production (GVP) estimated at $85m per year.[5]

The ABARE Survey reports about 24 softwood timber processors during 1995-96, some of which produced wood-based panels. Most softwood processors were located along the coastal strip between Maryborough and Brisbane. A large proportion of these operations process exotic pines, mostly slash and Caribbean pine. Some also process plantation hoop pine.[6] Softwood mills were estimated to employ some 1100 people in 1995-96, with GVP exceeding $200m. Some 30% of softwood mills each process 10,000m^3 or less of harvested timber per year, in total representing 3% of regional throughput. On the other hand, 26% of these softwood mills each process 50,000m^3 or more, and in total account for 78% of regional throughput.[7]

Timber production also covers wood products other than sawlogs, such as poles, girders and posts. The average annual GVP for these other wood products in the SEQ region in 1996/97 was $13.8m.

2.2.3 Non-Timber Forest Uses

(i) Mineral and Extractive Resources

The SEQ RFA region contains 93 exploration tenements for minerals (including gold and industrial minerals) and for coal covering 557,321 hectares and also contains 46 mineral development and mining leases (including for oil shale) covering 89,956 hectares. The SEQ region is moderately to highly prospective for a number of mineral deposit types and is likely to contain undiscovered deposits. (See CRA project SE 3.1 *Assessment of Mineral and Extractive Material Resources* for details of known and potential mineral deposits in SEQ).

[3] *South East Queensland Comprehensive Regional Assessment* Queensland/ Commonwealth Governments 1999, p118

[4] Bull, Tim; Hansard, Allan; Glen, Yvette *Economic Survey of Log Processing Facilities in the South East Region of Queensland*. ABARE July 1998 (CRA Project Report SE2.2)

[5] From ABARE analysis of CRA data

[6] ABARE Op cit p14

[7] Ibid p18

Active mining operations in forested areas exist in 19 centres in the region, the largest of which are on North Stradbroke Island and Tarong. In 1996-97, these mines produced coal, mineral sands, gold, magnetite and other industrial minerals valued at $199.2m and directly employed over 550 people. Through exploration, demand for products and services, coal-fired electricity generation and downstream mineral processing, the industry generates additional economic activity and employment.[8]

(ii) Cattle Grazing

Cattle grazing is an important SEQ forest use. Cattle are grazed on 45% of State forest, timber reserve, and State reserve land under Stock Grazing Permits or Term Leases. Most SEQ wood-producing Crown estate is under a form of grazing lease for growing, breeding, and fattening cattle (see report of CRA project SE 4.2 *Forest Grazing, Apiculture, and Other Products Description and Assessment).* Although forested grazing land is relatively unproductive compared to pastoral land, farmers see it as important for flexible herd management.

(iii) Apiary

Queensland's apiary industry is based primarily in SEQ with apiary sites most dense in the central area, especially around Gympie/Kilcoy-Woodford. Honey is the main source of income for apiarists followed by beeswax, queen bee breeding, pollination services, pollen, and propolis. (For more detail see report of *CRA* project SE4.2 , *Apiculture, and Other Products Description and Assessment).*

(iv) Flora Collection

Flora collection is the smallest, but fastest growing forest based industry in the SEQ RFA region and it is highly export-oriented. Current annual industry GVP is around $3m and is expected to triple over the next 10 years SEQ flora collection is based primarily in the North Coast/Gympie/Kilcoy-Woodford areas. (For more detail, see report of CRA project SE4.2, *Apiculture, and Other Products Description and Assessment).*

(v) Forest Based Recreation

Forest based outdoor recreation opportunities exist on forested land across all tenures in the region. Most demand falls on national parks and State forests. Activities such as camping, picnicking, bushwalking and pleasure driving are most popular, with horse riding, trail bike riding and four wheel driving becoming increasingly popular[9].

An estimated 7.6m visitor days are spent in State forest and national parks each year. Most visits are day trips. The number of camping nights spent each year is estimated at 650,000. Total expenditure for all these visitor days is estimated as $196m for 1997. The demand for outdoor recreation in SEQ forests is likely to grow considerably in the future.

2.3 Social and Community Aspects of the SEQ RFA Region

While the SEQ population growth is likely to focus on southern coastal areas in coming years, the northern inland area of the region is likely to undergo a population decline. There is a marked difference in key community indicators across the region. Western shires have a higher proportion of aged people and higher levels of employment in agriculture, forestry and labouring.

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[8] Report of CRA project SE3.1 *Assessment of Mineral and Extractive Materials Resources*, Queensland/Commonwealth governments, 1999.

[9] Report of CRA project SE4.1A *Forest Recreation and Tourism Assessment*, Queensland/Commonwealth governments 1997

Public concerns about forest management are highest in the north coast sector and lowest in Esk, Kingaroy and Builyan areas. This concern is generally higher in the 20–29 year age group and in those households not dependent on timber resource. These latter households are also more likely to have greater recognition of the intrinsic values of the forests (the non-use values such as aesthetic and conservation values). On the other hand, households with forest industry employees are more likely to put greater store in the extrinsic value of forests (eg. the production and economic values).

During the CRA process, 12 case study areas (Gympie, Conondale, Linville, Cooroy, Builyan, Many Peaks, Wondai, Dingo, Beaudesert, Woodford, Maryborough, Brooweena and Eudlo) were studied in greater detail[10]. These studies provide a social and demographic profile and indicate the service delivery capacity of these towns as well as an assessment of the potential responses of local communities to changes in forest use and management.

The studies indicate that members of the 12 case study communities are concerned about job losses in the forestry sector and the flow-on impacts on their town's economy. Community visions include a sustainable timber industry, farm forestry and plantations, balanced with protection of the environment and biodiversity.

Two CRA projects dealing with indigenous matters examine indigenous community issues and the potential impact of changes in forest use on indigenous communities.

2.4 Existing Conservation Situation

In SEQ, the existing dedicated reserve system comprises about 390,000 hectares with a further 32,000 hectares reserved at Blackdown Tableland. These reserves comprise approximately 35% of government managed public land (1,205,000 hectares) and approximately 7% of the RFA region.

Conservation reserves greater than 1000 hectares include Bribie Island National Park, Bunya Mountains National Park, Burrum Coast National Park, Castletower National Park, Conondale National Park, Crow's Nest National Park, Curtis Island National Park, D'Aguilar National Park, Deepwater National Park, Eurimbula Resource Reserve, Goodnight Scrub National Park, Great Sandy National Park, Kroombit Tops National Park, Lamington National Park, Main Range National Park, Moreton Island National Park, Mt Barney National Park, Mt Chinghee National Park, Mt Walsh National Park, Noosa National Park, Poona National Park, Springbrook National Park, Tamborine National Park and Tarong National Park.

Existing conservation reserves have a bias in their distribution with most reserves lying along the coast and along the McPherson and Great Dividing Ranges. The effect of this is demonstrated in Figure 2 (see report of CRA project EH1.2B *Forest Ecosystem Mapping and Analysis*). Major landscapes based on coastal areas (estuarine deposits, sand dunes and beach ridges) and Tertiary volcanic rocks have the best representation in reserves in terms of both presence, absence and total area. Those landscapes based on sedimentary rocks, metamorphic rocks and older volcanic rocks are less well represented. The more fertile landscapes (alluvial plains, Tertiary plateaus with red soils, landscapes based on Tertiary volcanics and some sedimentary rocks such as shales) have the highest number of endangered ecosystems - these areas also have a long history of intensive human settlement.

There is very little representation of the interior of the bioregion and of inland lowland areas and mid-slope topographic areas. Much of the lowland communities have been cleared for agriculture, pastoral development, logging and urban development. There are also many small, isolated reserves that are difficult to manage.

Many State forests are located in the forested hills and ranges between the D'Aguilar Range near Brisbane to the Many Peaks Range south west of Gladstone. There are six conservation reserves within this part of South East Queensland including D'Aguilar National Park, Conondale National Park, Mt Walsh National Park, Goodnight Scrub National Park, Kroombit Tops National Park and Castletower National Park.

[10] See report of CRA project SE5.3 *Social Case Study Areas*, Queensland/Commonwealth governments 1998

Figure 2: Current Conservation Levels for Regional Ecosystems across Major SEQ Landscapes with respect to JANIS Targets

Major landscape	No. of SEQ ecosystems	No. of SEQ ecosystems in conservation reserves	No. of endangered and vulnerable and rare ecosystems protected to JANIS targets / total number of threatened ecosystems	No. of common ecosystems presently conserved to JANIS target/ total number of common ecosystems
estuarine deposits	3	3	0/0	1/3
sand dunes and beach ridges	15	15	1/2	13/13
alluvial plains	13	11	0/8	2/5
Tertiary plateau remnants (red soils)	12	8	0/6	2/6
Tertiary plateau remnants stripped of soil	2	0	0/2	0/0
Tertiary volcanic rocks especially basalt	24	21	2/12	9/12
sedimentary rocks	24	15	0/9	2/15
metamorphic rocks	19	10	0/2	3/17
older volcanic rocks	28	20	0/7	3/21
Blackdown Tableland	7	7	4/4	3/3
TOTAL	**147**	**110**	**7/52**	**38/95**

A total of 110 of 147 regional ecosystems defined in SEQ and Blackdown Tableland are presently in conservation reserves (Figure 2). Forty-five ecosystems are presently reserved at levels recommended by JANIS. However, a significant number of ecosystems occur extensively on private land and therefore cannot be reserved to the recommended levels on public land. Six unconserved ecosystems occur on tenures other than State forest and timber reserves. Seven ecosystems that are reserved but at less than their JANIS target levels do not occur on State forest and timber reserve (no further areas could be selected in any of the scenarios).

Figure 3: Status and Protection Levels of Regional Ecosystems in Existing SEQ Reserves

JANIS status of ecosystem	JANIS target	No. of ecosystems	No. of ecosystems with JANIS targets met	No. of ecosystems not in reserve or State Forest/timber reserve	No. of ecosystems included to maximum extent possible at present
Endangered	100%	8	0	4	2
Rare	100%	18	5	2	3
Vulnerable	60%	26	2	0	1
Common	15%	95	38	0	1
Total ecosystems		**147**	**45**	**6**	**7**

Approximately half (55%) of the ecosystems that can be protected to target on public land meet that target within the existing reserve system. Even if all State forest and timber reserves were to be protected in a CAR reserve system, the JANIS environmental targets could not be reached for a significant number of values. However, some other values would be protected to levels far greater than recommended under JANIS.

Existing conservation reserves contain 63% of the wilderness and 53% of the old growth mapped for the region.

2.5 Indigenous Aspects

Land management is critical to Aboriginal customary and legal rights to land and to their cultural and spiritual traditions, including protecting particular places and values. SEQ Indigenous groups thus have expressed an interest in the land allocation and forest management outcomes of the RFA process. Indigenous interests see the RFA as a unique opportunity for them to participate in tenure and management decisions for SEQ forests. In particular, they seek certainty and legally binding agreements with governments and other parties as a base for strengthening their social and economic position. Native Title Representative Bodies participated on the SEQ Reference Panel.

For the SEQ RFA process, Indigenous interests are concerned that:

- they are not marginalised in decision making and are effectively consulted
- their rights are not eroded by RFA decisions
- RFA implementation provides for their participation in management of forested areas to protect Aboriginal cultural and spiritual values and to participate in economic development.

While much of the SEQ Crown forested estate is subject to Native Title claim under the *Native Title Act 1993*, Indigenous traditional owners have spiritual and cultural responsibilities for particular places in SEQ native forests.

The Working Group established by the SEQ RFA Steering Committee to represent regional indigenous interests has proposed Indigenous Land Use Agreements under the Native Title Act as a mechanism to achieve mutually satisfactory outcomes for Native Title holders and others with interests in land, sea and resources.

Governments have acknowledged that some proposals, which may be included in the RFA (such as changes of tenure), may affect Native Title if it continues to exist when the RFA is signed. Indigenous groups will be fully consulted about any such changes arising from the Agreement. While governments do not see the RFA process itself as the appropriate forum to resolve Native Title issues and for determining Native Title, no decision has yet been made about the extent to which the Indigenous Land Use Agreement approach could contribute to RFA outcomes.

CHAPTER 3: STRATEGIC ISSUES FOR SCENARIO DEVELOPMENT AND FOR A SOUTH EAST QUEENSLAND RFA

The strategic issues discussed in this Chapter apply across the full range of reserve possibilities, including (but not limited to) those approaches presented in this report. They are also fundamentally important for the development of a RFA and have major implications for its economic, conservation and social outcomes.

Issues discussed in this Chapter include:

- allocation zones in relation to the SEQ RFA region
- ecologically sustainable forest management
- management of Crown native forests (including for timber industry and other uses)
- private native forests
- application of the JANIS reserve criteria and achievement of a comprehensive, adequate and representative reserve system
- alternative policy approaches
- forest industry development potential (timber industry possibilities such as wood cluster processing centres and plantations development as well as potential development of non-timber industry uses)
- alternative silvicultural systems for State forests.

As decisions in these areas are likely to have specific implications for particular industries, communities and stakeholder interests, comments are invited on how these might be considered in relation to possible reserve design approaches, and other forest management issues, including those presented in this Report.

3.1 Sawmill Allocation Zones in Relation to the SEQ RFA Region

The CRA Report on public resource considered all Crown resource within the 14 allocation zones. However, two of these zones (Eidsvold-Monto and Gayndah-Mundubbera) extend beyond the SEQ regional boundary, with over 90% of the Crown forest areas in these two zones being outside the SEQ RFA region. Crown sawlog allocations in these zones will not be significantly affected by any forest use changes related to the scenarios described in this report. Therefore, the Eidsvold-Monto and Gayndah-Mundubbera allocation zones have been excluded from impact reporting for the purposes of this Report.

3.2 ESFM Assessment

As part of the CRA/RFA process, a two stage Ecologically Sustainable Forest Management (ESFM) assessment of SEQ forest management systems and planning processes was undertaken. Both stages of this process involved an independent panel of experts agreed in consultation with the SEQ RFA Reference Panel and the Commonwealth and Queensland governments.

The first stage of the ESFM assessment was an independent expert assessment of whether Queensland had sufficient forest management systems and planning processes in place to warrant a full review of the capacity to deliver ecologically sustainable forest management in the SEQ RFA region. This initial assessment was primarily based on documentation of forest management systems and processes.

For the second stage, an Expert Panel, chaired by Professor Geoff McDonald, assessed whether planning processes and management systems applying to all SEQ forested areas of all tenures – protected areas, State Forests and timber reserves, other Crown land and freehold land – could deliver ecologically sustainable forest management (Panel members are listed at *Appendix B*). Two Working Groups (on private lands and on cultural heritage management) contributed to the work of the Panel.

The Expert Panel presented an Interim Report on key RFA issues for scenario development (focussing mainly on timber production on Crown land) in early March. Its subsequent final report is not reflected in this Report, but will be considered in RFA negotiations. While ESFM does not affect reserve design, it will be an important consideration for Commonwealth and Queensland governments in negotiating a SEQ RFA.

As part of its assessment, the Expert Panel highlighted issues that could influence the development of scenarios and RFA outcomes. These issues include:

- management of cultural heritage values and sites
- recreation use and planning
- the adjustment for ESFM in estimating sustainable yield
- managing grazing impact.

The report of the CRA project *Appraisal and Accreditation of Wood-yield Methods* also noted a need to ensure that Queensland forest management systems and processes, in particular the yield simulation model, could provide for ESFM.

3.3 Management of Crown Native Forests

3.3.1 Calculation of Sustained Yield

Queensland Department of Primary Industries (Forestry) calculation of native forest wood yields is the basis for determining the annual allocation of Crown sawlogs to sawmills within SEQ allocation zones.

The CRA *Appraisal and Accreditation of Wood-yield Methods and Data* project[11] reviewed the growth model, data and sustained yield calculations used by DPI Forestry to calculate wood yields for public forest. This study described and assessed the system and provided a basis for accreditation of methods and yield predictions.

Although some work has been done to rectify problems identified in previous reviews, the report found there could still be some problems in accurately estimating the merchantable volume. A comparison of actually harvested volumes with expected volumes also suggested that data quality problems remain although procedures are in place to detect and remedy these deficiencies. Some caution is suggested in interpreting outcomes from the system until these deficiencies are rectified.

[11] Report of CRA project SE1.1 *Appraisal and Accreditation of Wood-yield Methods and Data;* Queensland/Commonwealth governments.

Governments remain committed to ensuring that sustained yield estimates are based on independently verified modelling and data. A further rigorous assessment of the Queensland sustained yield systems by nationally recognised experts will be carried out before an RFA is finalised. Comments are invited on the existing system for calculating sustained yield.

3.3.2 Non-Timber Industry Uses of SEQ Crown Native Forests

Extensive use is made of SEQ Crown native forests for purposes other than timber production. These uses include grazing, beekeeping, a variety of passive and active recreational activities, mining etc. Some of these activities use forests because of their inherent natural characteristics and some for logistic reasons or because of the existence of roads or other infrastructure in Crown forest areas.

These uses include but are not restricted to:

- 510,000 hectares grazed under 567 permits
- 20 major quarry operations
- 6 operating mines, 66 mining leases covering around 3000 hectares and about a further 265,000 hectares covered by mining exploration permits, licence applications or development licences
- 30% of the resource for 315 commercial beekeepers (total licensed capacity 55,000 hives)
- 7.2m independent visitor days per year (1.8m to State forest and 5.4m to national parks and other protected areas)
- 84 commercial tour operators providing 347,000 visitor days per year
- an average of approximately 5,200 person days (1997/98 data) of military training in around 30 State forests
- $3m current value of production from non-traditional forest products (for example foliage).

Over the past 20 to 30 years, State forests have been increasingly managed to recognise and accommodate these non-timber uses, within a broad multiple use management framework. However, forest production (for example timber, quarry materials and honey) and watershed protection remains the primary management objectives under the Forestry Act.

Under the multiple use philosophy, not all State forest is used for all possible uses. Management priorities are assigned across particular forest areas, reflecting their specific values and demands and where possible, providing for compatible priority uses together or near each other (in space and/or time). The less intensive silviculture and harvesting regimes commonly applied in SEQ have tended to provide opportunities for other forest uses near, or in conjunction with, timber production activities.

Near major population centres, the multiple use approach and community demands have seen areas of State forest or whole State forests managed primarily for other purposes and uses. Demands on forests by such uses as recreation, tourism and non-traditional forest production are growing. This trend appears likely to continue.

The increasing significance of non-timber forest uses in SEQ presents both opportunities and challenges for development of RFA outcomes. The potential for expansion of existing and new non-timber uses within a sustainable development framework may provide opportunities for economic development and social benefits. However some of these activities are excluded from, or are inappropriate in, national parks and other existing Queensland conservation reserve tenures.

Any changes to tenure and forest management objectives proposed as part of the RFA process will need to consider the potential implications on non-timber forest uses. Conversely, economic development scenarios involving enhancement of non-timber forest uses should consider the need to take into account nature conservation and biodiversity objectives. Development of new tenure arrangements may be necessary to address some of these issues. Any reductions in timber production could also have implications for non-timber forest uses. Opportunities for some uses may be enhanced but the current contributions from timber royalties to

infrastructure maintenance and forest protection activities (which now benefit some non-timber forest users) would also be reduced. Funding or other strategies may need to be considered to enhance or maintain management for non-timber forest uses after an RFA is in place.

3.4 Private Native Forests

Native hardwood forests on freehold lands are a major current source of supply of sawlogs and other products in SEQ. They are also significant from an environmental perspective, containing approximately 65% of the total current extent of vulnerable and endangered regional forest ecosystems.

Whilst CRA assessments provide an improved understanding of this resource, it is emphasised that knowledge of private native forests and their significance to the timber industry is still limited. Under the modelling assumptions used in the CRA report, available data suggests the potential long-term sustainable cut of existing private forests in SEQ could range from 45,000m^3 per year to 215,000m^3 per year depending on modelling assumptions such as minimum merchantable yields. Further, the actual cut that this resource can sustain in the long-term is highly dependent on management intentions/actions of landholders, which are not well understood.

The significance of the private native resource may alter as a consequence of management changes in publicly owned forests. For example, reduction in timber supply from public native forests may increase demands on private native forests to supply hardwood sawlogs and other products. However, there is insufficient knowledge of industry and market dynamics to suggest with any confidence the consequences of a reduction in public forest supply. The alternative scenario (of reduced harvesting demands on private native forests) is also possible if reductions in public native forest supply lead to a rationalisation of the existing industry.

Planning and other tools to regulate/promote the sustainability of private forest management are largely absent in the region. Some regulatory mechanisms are applied to vegetation management (particularly tree clearing) by individual local authorities and a number of voluntary mechanisms are supported at the community, local government and State Government levels.

The *Integrated Planning Act 1997* provides a developing framework for planning, regulating and securing rights to conduct sustained timber production activities on private lands but does not address broader vegetation management and tree clearing.

An unknown proportion of the current private supply is salvaged from forest clearing and land use change activities. Of the balance, some is obtained from forests actively managed for timber production, perhaps combined with grazing and other uses, and the remainder is from forests not actively managed for timber except for occasional harvesting. The extent of active private timber management in SEQ cannot be accurately estimated.

It is not known if changes to public forest management/timber supply would influence the nature and extent of private managed forestry and clearing. For example, increased timber demand on private forests could lead to more extensive active timber management but may also encourage liquidation of private forests through clearing. Reduced timber demands could have equally diverse impacts depending on landholder motivations, prevailing regulations and available incentives.

3.5 Application of Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia (JANIS Criteria[12])

The JANIS guidelines comprise nationally agreed criteria for a comprehensive, adequate and representative reserve system for forests in accordance with the National Forest Policy Statement (NFPS) commitment to the conservation of Australia's biological diversity, heritage and cultural values. Flexibility in the application of the reserve criteria is needed in consideration of differing regional circumstances to ensure that the CAR reserve system delivers optimal nature conservation outcomes as well as acceptable social and economic outcomes. The JANIS CAR reserve criteria are therefore to be considered as guidelines rather than mandatory targets.

The JANIS guidelines recommend that all reasonable effort should be made to provide for biodiversity and old growth forest conservation and wilderness in the dedicated reserve system on public land. However, where it is demonstrated that it is not possible or practicable to meet the criteria in the dedicated reserve system, other approaches will be required. The overview provided in Section 1.3.3 of this report and the information presented in the descriptions of scenarios in Chapter 6, indicate that a reserve system, even if complemented by areas within State Forests and timber reserves, cannot capture all SEQ conservation values. This is a consequence of the amount of SEQ land in private ownership and the extent of clearing that has occurred for agriculture, grazing and urbanisation.

As JANIS outlines, a CAR reserve system comprises four components: dedicated reserves, informal reserves, values protected by prescription and private land conservation strategies. The primary focus for the SEQ reserve system will be on ensuring viability of conservation values on public land through reservation of areas of sufficient size to allow ongoing ecological processes. There will remain, however, many values on public and private land that cannot be adequately represented in formal reserves. Protection by informal reserves or off-reserve management will be the most effective way of conserving these values.

3.5.1 Dedicated Reserves

The dedicated reserve component of the CAR reserve system should consist of reserves equivalent to Categories I, II, III or IV as defined by the International Union for the Conservation of Nature Commission for National Parks and Protected Areas, the most secure form of conservation. Security of tenure is an important consideration, as are appropriate management regimes. Parliamentary action by either the Commonwealth or State Government is required to revoke a dedicated reserve.

3.5.2 Informal Reserves

Where the protection of conservation values in dedicated reserves is not possible or practicable, areas may be reserved under other secure tenure or management arrangements. Informal reserves should be set aside specifically for conservation purposes and meet the following principles:

- they must have approved management plans and be managed accordingly
- there must be an opportunity for public comment on changes to reserve boundaries
- they can be accurately identified on maps
- must be of an area and design sufficient to maintain the values they seek to protect.

[12] The Joint Australian and New Zealand Environment and Conservation Council (ANZECC)/Ministerial Council on Forestry, Fisheries and Aquaculture (MCFFA) NFPS Implementation Sub Committee.

Informal reserves are less secure than dedicated reserves as they do not require Parliamentary action for their revocation. Examples of informal reserves may include conservation zones in approved forest management plans, for example, under Multiple Use Management Plans that exclude logging.

3.5.3 Values Protected by Prescription

The diverse conservation requirements and extent of ecosystems and species in SEQ mean that a range of effective strategies for off-reserve conservation will be required to achieve effective RFA outcomes. For example, some regional ecosystems and species are limited to patches of a few hectares while other unconserved species and ecosystems remain relatively widespread and abundant. Specific strategies will need to be developed as part of the RFA to cover the off-reserve management of old growth and identified remnant vegetation communities. Management of rare and threatened species may be most effectively facilitated by prescription.

According to JANIS, where protection of biodiversity values is to be prescribed in Codes of Practice or Management Plans (and if appropriate, identified on maps), prescriptions should meet the following principles:

- there must be an opportunity for public comment on proposed changes
- they must have a sound scientific basis
- they are adequate to maintain the values they seek to protect.

3.5.4 Private Land Conservation Strategies

For many ecosystems, a large part of their remaining extent occurs only on private or leasehold land. While the NFPS recognises that the CAR reserve system should be drawn from public land in the first instance, it will be necessary to investigate strategies for conservation on other tenures, especially where there are threatened ecosystems or species. While protection of nature conservation values on freehold land may benefit the landholder, in many cases, tangible benefits are not apparent. The balance between private and public benefits and costs is thus a key issue for development of programs in this area.

At present, conservation management outside reserves in SEQ is given effect through:

- Nature Refuges established on a cooperative basis with landholders under the *Nature Conservation Act 1992*
- voluntary landcare-type programmes
- vegetation retention through local government planning.

These programs are implemented on a cooperative and voluntary basis between the landholder or manager and the relevant government. Queensland's *Nature Conservation Act 1992* recognises the importance of environment values on private land through a voluntary conservation agreement mechanism. Such mechanisms have been used successfully in assisting land owners to conserve values on private land. It is envisaged that mechanisms such as this will play a more important role in a CAR reserve system for Queensland than they have done in other States.

Voluntary acquisition of strategic parcels of land with highly important conservation values is a further option but has clear funding implications. In the 1990s, some areas with poorly conserved forest types were acquired by the Queensland Government after being offered for sale.

The suitability and performance of off-reserve conservation strategies should be monitored and future priorities identified. At present there is no mechanism that enables this to occur.

3.6 Alternative Policy Approaches for SEQ Crown Native Forests

3.6.1 Sustainable Timber Harvesting

The National Forest Policy Statement (NFPS) includes the goal of developing "…internationally competitive, ecologically sustainable wood production and wood product industries. Efficient industries based on maximising value adding opportunities and the efficient use of wood resources will provide the basis for expansion in wood and wood products manufacturing, which in turn will provide national and regional economic benefits." The Statement notes that native forest harvesting "can be done in an ecologically sustainable manner".

While in SEQ, native hardwood harvesting is heavily outweighed by softwood timber production, and some substitutability between native hardwoods and plantation softwoods exists, there remains a market demand for native forest timber products. Plantation timbers cannot substitute for these in all cases.

Existing milling and other infrastructure is already in place based on harvesting native timber, although major investment in value adding capacity would be desirable (the feasibility of such development is discussed later in this report). As the RFA would maximise industry security, the likelihood of such investment is increased. Further, there are many rural communities having substantial economic reliance on the native timber industry.

Scenarios A, B, C and D in Chapter 6 are based on a sustainable SEQ native hardwood industry, consistent with the NFPS. They also assume the establishment through an RFA of a CAR reserve system and the protection of ecological values through a high quality system of ESFM.

3.6.2 Transition Rationale

The concept of a transition to an industry primarily reliant on plantation timbers acknowledges that the current rate of harvest from SEQ State Forests may be unsustainable. For the 12 allocation zones that make up the bulk of the SEQ RFA region, current annual sawlog allocation is 85,916m^3. Yield calculations show that in the absence of changes to a more intensive silviculture the sustainable yield would be in the order of 66,700m^3. Further, resource reduction arising from codes of practice and improved forest management prescriptions reduce this level to around 52,020m^3. Implementing this level of sustainable Crown native forest log supply would have a significant adverse effect on the timber industry. The implementation of a CAR reserve system as part of an RFA is likely to reduce this sawlog supply still further.

A transition strategy proposes continuing to supply Crown timber at rates higher than the calculated sustained yield for most areas while supplies are available, together with an industry restructuring and regional economic development package to assist communities broaden their economic base.

Key elements of the transition approach set out in Scenarios E and F in this report include:

- some areas of public forest are immediately declared unavailable for timber harvesting. For remaining areas harvesting continues while supplies are available (0-20 years). In the long-term, Crown native forest harvesting would cease in all transition areas. Because the transition scenarios maintain Crown sawlog supplies at current levels until logging cessation in each allocation zone, there is no impact on industry, employment or dependent communities until Crown sawlog harvesting ceases in a zone.

- an economic development package focussing on developing the whole wood and wood products industry, and support for regional communities to diversify their economic base. Development of plantations as an alternative wood supply and assistance for value adding are elements of this package.

Transition strategies are not a new concept. A transition strategy was implemented in Queensland in the late 1920's with the harvest, at unsustainable rates, of the native softwood hoop pine while plantations were being developed as a replacement timber supply. An outcome of the successful implementation of this strategy is the expanding plantation timber processing sector that now dominates the SEQ industry.

3.7 Forest Industry Development Potential

3.7.1 Industry Development Policy Framework

Recognising the forest industry's positive role and contribution to regional economic development, governments are working with the industry to promote the development of competitive and efficient forest industries, to maximise the economic benefits. Governments seek to ensure the market is operating efficiently and will respond to impediments that constrain the industry from efficient operation and realising its economic potential.

If industry opportunities are to be taken, and if the Queensland forest industry is to consolidate itself in the global market place, opportunities will need to be:

- industry driven
- open to existing and new industry investors
- based on market conditions
- capable of capturing economies of scale
- commercially sustainable in the long- and short-term
- export orientated, and high value adding.

Consistent with these objectives and to better position the industry and promote a continued, efficient forest industry, government will, where appropriate:

- analyse and seek to remove impediments to forest industry investment proposals or opportunities
- facilitate major industry proposals that provide net economic and employment benefits to the economy
- facilitate access to market opportunities.

Governments are interested in development of industry opportunities that will provide significant net economic benefits in terms of:

- substantial increases in employment;
- maintaining and attracting business investment; and
- establishment of high value adding and export-oriented industries.

3.7.2 Industry Development Potential: Hardwoods

The Margules CRA analysis[13] shows that while overall hardwood imports to SEQ had declined between 1989-90 and 1996-97, the overall value of imports increased (with high value imports consisting primarily of mouldings, decking and joinery timbers). Some of these products have substitutes that could be manufactured in SEQ from native hardwoods (and in some cases plantation softwoods).

The report suggests that the natural strength, hardness, excellent surface finish and durability of SEQ native hardwoods, together with SEQ's freight cost advantage over other parts of Australia, provide opportunities for the SEQ native hardwood industry in a number of Asian markets, especially Japan. In particular, there is an opportunity to increase sales of hardwood rough sawn timber, decorative veneer, mouldings and components.

[13] Margules Poyry; *Review of Value Adding/Transformation Opportunities for the South East Queensland Wood and Wood Products Industry*; ABARE; November 1998, pp17-26. (Report of CRA project SE2.6)

Opportunities arise in these markets because of decreasing volume and quality certainty and also increasing prices among traditional suppliers.

To tap into these export and corresponding domestic market opportunities, it is important to "reposition" SEQ hardwood out of its traditional structural/framing markets (still representing 65% of sales). In these product areas, hardwood now competes directly with exotic, native and imported softwood. Repositioning entails building on an industry development process already under way in the region. This involves an initial shift to kiln drying, through to more value-added products such as mouldings, components, flooring, decking and panelling (the economic feasibility of a cluster processing based development path is examined later in this report). In this context, it is important that industry coordinates its marketing efforts to ensure scale, quality and regularity of supply.

As will be seen from later analysis in this report, the native hardwood sector could face significant resource reductions due to likely unsustainability of current logging levels in both Crown and private forests under existing silvicultural practices. Additional pressures may arise from possible additions to the reserve system resulting from the RFA, the application of stricter logging prescriptions through new logging codes of practice currently being trialed, and any off-reserve management prescriptions required to satisfy ESFM principles. At the same time, as discussed below, changes in silvicultural practice in Crown native forests could improve this outlook. There is also the possibility, discussed in Section 3.7.5 of this Report, that hardwood plantations may prove feasible as a supplement to the native forest resource. In all, it is likely that there will be a sufficient resource base for pursuing the development possibilities outlined above.

3.7.3 Industry Development Potential: Softwoods

Analysis undertaken during the CRA process highlights the increasing importance of softwood plantations for industry. The native softwood plantations comprised almost entirely of hoop pine, provide increasing volumes of sawlogs through to 2010 and stabilising at around 520,000m^3 per annum by 2020. The exotic plantation sawlog yields will increase steadily over the review period from around 488,000m^3 per annum to 770,000m^3 by 2020.

The market study showed increasing importance of the plantation softwood industries, both sawn wood and wood panels, with exotic softwoods continuing to take market share from green hardwood framing and imported softwoods. Australian market opportunities exist for these products, but export markets will need to be developed with industry. The CRA report shows these products would be cost-competitive in Asia-Pacific markets, but they have no significant advantage over competing countries or the other Australian regions. Product definition and niche marketing will therefore be important for these markets to be profitably exploited. To this end, a proportion of the plantation harvest must be exported; manufacturers will need to concentrate on producing high quality and value-added products to avoid competing with regional commodity producers.

Softwood opportunities would appear to exist for an expansion of wood based panels products, specifically in the plywood and laminated veneer lumber manufactured products based on the exotic and native softwood plantation resources.

3.7.4 Potential for New Value Adding Capacity

This section highlights the potential for new hardwood value-added processing in SEQ. Such potential, if realised, could substantially alter the impact of resource reductions both at the baseline and for other scenarios presented in this Report.

Margules[14] reports (as part of the CRA process) that about 28% of sawn output from SEQ timber mills is currently processed further within the region. The report identifies a possible development path by which up to 80% of green sawn timber could be further processed within the region by 2020. Amongst the developments that would lead to such an outcome, Margules identifies cooperative investments in kiln drying, dressing and manufacturing of components. These could enhance access for sawmillers to both domestic and Asian markets with consistent quality, processed and semi-finished products.

[14] Ibid pp83-85

ABARE's FORUM model assessed the economic efficiency of such cluster processing for particular centres across the region. Both large and smaller value adding processing centres were modelled, with the larger centres requiring 22,500m^3 of green sawn timber input annually and the smaller ones just over 5,000m^3.

Such industry developments would enable small mills to operate closer to capacity. ABARE research shows that these small mills are, in many cases, family operations with investments fully amortised. As such, while they could potentially operate significantly below capacity (for example, at less than 50%) for a few years, it is unlikely that they would continue to operate at such a low capacity for any significant period. ABARE concludes that while smaller mills would not be directly involved in further processing, the development of further processing plants would enhance the long-term viability of these mills.

While FORUM has demonstrated the economic efficiency of cluster processing development, it should not necessarily be assumed that such development will automatically occur. Much depends on the willingness and confidence of the industry to invest in itself, on the removal of structural or regulatory impediments to industry development and on what Commonwealth and State Government support may be available.

The enhanced security that will result from finalising the SEQ RFA is expected to improve industry investment confidence. Governments will also work to ensure that non-Crown resource remains available at viable commercial levels on a long-term sustainable basis. Any government support will be determined in the context of negotiating a Forestry Industry Development Assistance Package (FIDAP) for the region.

3.7.5 Plantations Development

Potential for plantations to supplement or complement native timber resources is a major consideration in assessing the potential impact of future native timber resource reductions.

Through the *Plantations Vision 2020* programme, the Commonwealth and Queensland governments are facilitating a trebling of the national plantation estate by the year 2020, preferably through private investment. Plantations offer the opportunity to supplement the native timber resource, for the diversification of the industry resource base and consequently the opportunity to diversify its product range. Plantation development can also offer landcare and other environmental benefits.

The RFA process has identified a number of opportunities for the establishment of purpose-planted timber plantations, including speciality, short rotation and sawlog timber plantations.

Land use planning issues and security are the most influential factors in assessing potential investment in timber plantations in Queensland. The role of government is to provide a stable environment for timber plantation investment through minimising land use planning uncertainties, ensuring the 'right to harvest' and by providing market and technical information.

There is an emerging interest in SEQ plantation investment including farm forestry joint ventures, syndicate subscribers and major corporations. Further specific initiatives that may facilitate investment in plantations are:

- targeted development of research and development expertise in species development and silvicultural management practices
- State Government consideration of further participation in joint venture plantation initiatives.

(i) Softwood Plantations

The softwood plantation industry is well established in SEQ (most timber produced in the region comes from exotic softwood plantations). It offers ready infrastructure and product identification opportunities for further expansion of the estate and development of the processing industry.

However, ABARE's research shows relatively limited areas of cleared land where the likely returns from softwood plantation development would exceed returns from alternative agricultural uses. Modelling of further

value adding development of softwood plantations, and examination of the extent to which the industry could take up hardwood substitution possibilities identified by Margules is underway.[15]

(ii) Hardwood Plantations

The current availability of hardwood resources from SEQ plantations is extremely low, and is insufficient to maintain, or even supplement, native forest timber supply for the foreseeable future. The existing plantation estate is only 1,100 hectares, and even though a proportion is older, there are no trees between five and 30 years old, hence there is no continuity of supply for the next 25 years. Therefore, even if a plantation estate were commenced now, there is at least a 25 year period before plantation timbers could enter the industry in significant quantity. The risks to security of this supply are unknown, as it could be subject to biological, financial and change of ownership impacts.

The Bureau of Rural Sciences and ABARE have undertaken initial analysis of the commercial feasibility of establishing a hardwood plantation estate in SEQ. This analysis, which was restricted to the North Coast, Kilcoy-Woodford and Gympie areas[16], indicated that approximately 450,000 hectares of cleared land could support viable hardwood plantations. However, only approximately 5,400 hectares of the better quality land would yield higher returns under plantations compared to agriculture, with some 13,000 hectares having the potential to exceed 75% of estimated agricultural land values under the assumptions used in the study.

Because of the potentially high yields from plantations using modern silvicultural techniques, the areas of land required are relatively modest. For example, annual plantings of about 200 hectares of lower quality land (mean annual increment of $15m^3$ per hectare (that is MAI = 15) over 33 years) resulting in a total plantation area of around 6300 hectares, would yield an ongoing volume of around $60,000m^3$ of sawlogs each year, plus $35,000m^3$ of small roundwood.

Further work is extending the study to assess the potential commercial feasibility of the Boonah-Warwick areas for hardwood sawlog plantations. Differing assumptions will also be studied, notably an initial objective of pulpwood development which would gradually evolve towards sawlogs as the primary output. This should contribute to shorter rotation and investment return times and therefore possibly to an increasing area of land whose best returns would lie in hardwood plantation establishment. Development of a new plantation hardwood processing industry will be modelled, as plantation hardwood differs from native hardwood in terms of its lower timber age and smaller size. New processing equipment and capacity would be required to process this timber.

3.7.6 Other Industry Development Possibilities

(i) Tourism and Recreation

A *Tourism Queensland* study is under way to identify potential commercial ecotourism concepts for the SEQ region. Initial estimates for the five forest areas selected for evaluation (based on expected demand patterns) suggest potential employment of up to 100 people. It is possible that some commercial private sector ecotourism ventures may require some government support for infrastructure.

Currently 84 operators run tours in SEQ State Forests and forested National Parks – 40 of these (employing 229 people) are completely dependent on forests. The average employment supported by each forest dependent commercial tour operator is 5 to 6 people.

[15] Ibid pp92-93

[16] BRS internal report

(ii) Mining

Known SEQ deposits which might be mined are gold (Mount Rawdon & Norton) silver (Mount Rawdon), zinc (Ban Ban), ilmenite, rutile, zircon (Agnes Waters-Middle Island-Hummock Hill Island) and coal (Spring Mountain). Extractive material deposits may also be significant. Any new reserves could intersect with existing mining or exploration tenements. In finalising a SEQ RFA, both governments will take these tenement areas and areas with high mineral potential into account in decisions of reserve design and the status of reserves.

(iii) Alternative Agricultural Industries

Potential for expansion and development of agricultural industries in the RFA area has been identified. It is noted that there are development opportunities for:

- native species industries - native flowers and foliage, Australian bush food and bio-prospecting
- other crops and industries based on (but not specific to) native species – medicinal herbs (nutraceuticals), essential oils, bees and honey
- other crops and industries showing potential in the area – horticultural products, dairy goats and aquaculture.

3.8 Alternative Silvicultural Systems for State Forests

Currently, timber harvesting in SEQ Crown native forests is undertaken on a selective basis, resulting in yields over the cutting cycle as low as 2–8m^3 per hectare in dry forest types, and 8–20m^3 per hectare in moist to wet forest types. Alternative silvicultural systems encompassing a range of stand treatments and impacts, ranging from a modest increase in harvesting to more intensive regimes, may improve regrowth. Targeted application of such alternative silvicultures in specific areas of State forest may improve the capacity of these forests to deliver long-term high quality sawlogs and other forest values.

For example, varying the size and distribution of gaps in some forests – by removing trees that exceed habitat requirements and are not suitable for sawlogs – would reduce the canopy cover of retained trees and provide better conditions for eucalypt regeneration and growth. It would also reduce competition for sunlight, water, nutrients between trees retained as potential future sawlogs, leading to faster growth.

Neither government has yet decided whether any such selective silvicultural regimes to increase timber production should be endorsed as part of the SEQ RFA process, for use in State forests. There are several issues to be considered:

- economic viability. Alternative silvicultural regimes were applied in some SEQ State forests before 1980. Sawlog operations in some forest types were followed by the removal of low quality stems and the thinning of the resultant regeneration. Generally post harvest silvicultural thinning was discontinued due to high costs and limited gains in timber production. The long period between investment (the thinning) and return (the harvest) suggest that such practices may not be economically viable in SEQ State forests.
- ecological sustainability. Alternative silvicultural systems to increase timber production are more intensive than the current silvicultural regime. The ecological impacts of the implementation of such regimes in SEQ State forests are not known. Prescriptions to safeguard ecological values have not yet been developed.
- limited information. While different silvicultural regimes are practised in other Australian states, there is limited quantitative information about the relationship between such silvicultural practices and their effects on SEQ forest types. Long-term trials, covering a range of treatments and forest types would be required to fully evaluate their economic and environment impacts.
- commercial viability for processors. Alternative silvicultural regimes generally require the harvesting of large volumes of small diameter sawlog and low quality logs.

Governments invite comments on these issues, including ecological sustainability, on the commercial practicability of harvesting this timber and on industry capacity to process this volume of low-grade timber.

CHAPTER 4: A REGIONAL FOREST AGREEMENT FOR SOUTH EAST QUEENSLAND

4.1 Introduction

While the final form and content of a SEQ RFA is yet to be determined by governments, there are several key components which will be the subject of inter-governmental negotiations. These include:

- agreement to the means by which governments will pursue ecologically sustainable forest management
- management of Crown native forest
- defining and describing those areas which might form the basis of a comprehensive, adequate and representative reserve system
- industry development and transition strategies to facilitate timber industry decisions to move to greater value adding and to making better use of available resources, as a basis for future regional and community development
- encouragement for plantations development as a key resource supplement to resources from native forests
- encouragement for sustainable management of private production forests and for voluntary action to improve conservation outcomes on non-production private forested land
- RFA operating and implementation arrangements, including review, monitoring and reporting mechanisms, funding arrangements, data agreements and continuing public and stakeholder participation.

4.2 Comprehensive, Regional and Representative Reserve Design Overview

As stated above, a comprehensive, adequate and representative (CAR) reserve system is one of the essential elements of an RFA. This report presents a range of indicative approaches, highlights their conservation, economic and social implications and indicates the kind of industry and regional development action that could be linked to them.

No scenario in this report represents the position of either the Commonwealth or Queensland governments, which have not yet decided the shape of a future SEQ RFA. Nor do any of these approaches imply that government land use decisions have been made. Inclusion of a particular area of land in one or more of the scenarios presented in this report does not imply that it is necessarily to be proposed as a National Park, or that existing non-timber industry land uses would no longer be permitted.

Development of Scenarios A and D in this report used a 'least resource cost' approach focusing particularly on rare, endangered and vulnerable ecosystems, and seeks representation of values across their environmental range, consistent with achieving manageable reserves. Some of the possible approaches are based on continued sustainable use of Crown native forests, coupled with significant industry development aspects (downstream timber processing and plantations).

The 'transition' scenarios (E and F in this report) would retain timber industry access to specified areas of Crown native forest during the transition period. Once logging ceases in an area, it becomes available for addition to the protected areas. These scenarios are also linked to significant industry development.

No scenario can be definitive, as the actual impact of a particular scenario would depend on associated decisions on matters such as industry development, mitigation of impact and reserve tenure.

4.3 Other Forest Activities

As set out earlier in this report, significant non-timber commercial activities such as mining and mineral exploration, grazing, beekeeping and flora collection, as well as a range of recreational activities and military training, take place in SEQ native forests. While these activities could potentially be affected by future decisions on land tenure, no tenure decisions are implied by the scenarios presented in this Report. Governments are interested in any comments from forest users on this issue.

Forest uses indicated above were assessed during the CRA process and their spatial distribution was examined. This information has been used to indicate how particular non-timber uses relate to scenarios. Governments will take potential effects of land use decisions on forest users into account in finalising a SEQ RFA.

4.4 Social Impact

4.4.1 Assessment

The social impact of changes associated with the RFA encompasses where affected people live, where they are employed and where they spend their money. It also includes their employers' location and spending patterns. To understand this process better, the development of scenarios included assessment of their potential social impact. The assessment used the following methodology.

The main unit for social analysis is Town Resource Clusters (TRCs). These are social catchments directly related to Crown timber resource use patterns across the region, including timber industry business expenditure and the household expenditure of their employees.

Processing centres are the areas in which wood is processed. The area does not necessarily include the area where the wood is harvested, but rather it tells us the most economically efficient distribution of wood for processing. Processing centres have been used as a unit for analysis of wood processing data.

Part of the social assessment process includes estimating the potential employment changes across the region. These figures are derived from changes in available hardwood timber resources and are at least indicative of changes in employment at a TRC level.

Community Sensitivity Indices (CSIs) were used to identify those towns within the region that vary in terms of their relative sensitivity to change. The identifiable measures of sensitivity to change include age dependency, unemployment and occupation, weekly family income, and level of education.

A combination of a CSI, demographic profiling and *Business Dependency Survey* findings were used to assess which communities within the SEQ RFA region are most sensitive to changes in forest use and management.

The communities which are most sensitive to change in the use and management of forested lands are those which have:

- some dependence on hardwood timber processing industries or other forest industries
- relatively high levels of unemployment

- a limited or narrow economic base
- other demographic features indicating sensitivity to change.

4.4.2 Adjustment Support and Assistance

In May 1998, the Commonwealth and Queensland governments endorsed a Memorandum of Understanding for a structural adjustment package to support a SEQ RFA. The objectives of the package are to:

- provide assistance to individual businesses adversely affected by the Regional Forest Agreement (RFA) process
- assist in the restructure of existing timber harvesting and processing operations to promote the development of an efficient, competitive and environmentally sound native forest harvesting and processing industry
- provide assistance in relation to training and retraining, relocation, and redundancy to individual workers and self-employed contractors who are adversely affected by restructuring of the industry
- assist communities to manage change brought about by the RFA process.

In this context, governments agree that such structural adjustment assistance associated with the RFA should be commensurate with the extent of impacts on industry.

Examples of possible industry development initiatives that could be eligible for government support/assistance include:

- interest rate subsidies on capital loan, hire purchase, lease instalments and other approved finance facilities
- establishment and development grants
- business development consultancy subsidies (planning, marketing, feasibility, etc), startup subsidies
- subsidies for local government fees and charges.

In addition, the Commonwealth and Queensland governments are responsible for a range of programs that could provide support and assistance to industry. In concluding the RFA, governments will consider use of these programs in the SEQ RFA.

4.4.3 Queensland Government: Community Response Strategy

A whole-of-government community response strategy is a necessary approach to mitigating potential job losses resulting from industry restructuring. This approach includes the development of economic initiatives (for example plantation expansion, facilitation of value adding opportunities and investment in ecotourism ventures). Additionally, a community response component aims to broaden the economic base of the particular region. Specifically, the approach focuses on facilitating growth in other industries and businesses with a view to maximising employment retention and job creation.

CHAPTER 5: BASELINE FOR SCENARIO DEVELOPMENT: KEY COMPONENTS

The 'baseline' for RFA scenario development is the situation that would be likely to prevail in the absence of an RFA – it implies neither continuation of the existing situation nor the lack of change over time (for example, specific industry development action). Major factors affecting the level and potential impact of the native timber 'baseline' (compared with current harvesting levels) include estimates of sustainable yield level for private forests over the 20 year life of the RFA; Crown native forest yield reductions to sustainable levels; and industry development possibilities.

5.1 Existing Conservation System

(i) Biodiversity

Section 2.4 of this report provides an overview of the current conservation reserve system and the status of selected elements (regional ecosystems) of SEQ biodiversity. It identifies the strengths and limitations of the current reserve system when assessed against guidelines and criteria described in JANIS, in particular:

- coastal areas and the southern ranges are relatively well represented in reserves
- the agriculturally productive areas are generally poorly represented in reserves
- the ecosystems of the forested core of the region (the hills and ranges between Brisbane and Gladstone) tend to be sampled in reserves but only by relatively small areas.

JANIS targets cannot be reached for a range of regional ecosystems on State forest, timber reserves and existing reserves. This is due to characteristics of the natural environment of the area and settlement and clearing patterns. This is particularly the case for many of the endangered and vulnerable ecosystems that have become depleted due to clearing.

Additionally, non-forest targets are met to the maximum extent achievable on public land, and they therefore cannot be further improved in any of the scenarios. Other forest ecosystem targets can only be improved to a minimal extent, and this is achieved in all scenarios.

While regional ecosystems have been used as a general surrogate for biodiversity values, CRA project work indicates that similar patterns are evident among flora and fauna species; that is, some species are moderately to well conserved, others are less well conserved while land clearing and fragmentation are a major cause of population decline for those species with an endangered and vulnerable status.

Current reserves are used as a reference point in Chapter 6 of this report where conservation outcomes are described for each scenario. For example, reference to the figures in Appendix D indicates how each scenario could contribute to increasing the levels of biodiversity presently sampled in conservation reserves.

(ii) Old Growth

The SEQ old growth assessment found that old growth occupies approximately 8.5% of the forested area of SEQ and is scattered in mainly small patches across the region.

The JANIS criteria state:

- where old growth forest is rare or depleted (generally less than 10% of the extant distribution within a forest ecosystem), all viable examples should be protected, wherever possible. In practice this would mean that most of the rare or depleted old growth forest would be protected. Protection should be afforded through the range of mechanisms described in the national reserve criteria

- for other forest ecosystems, 60% of the old growth forest identified at the time of assessment would be protected.

Under the JANIS definition, SEQ old growth forest is rare. Around 56% of SEQ old growth forest occurs on public land and should be protected under the JANIS criteria due to its rarity and degree of fragmentation. As this fragmentation largely results from past land management practices, protection for other than the largest remaining areas or those patches that do not overlap with other values, is likely to be through the range of mechanisms identified in JANIS (that is, from reservation through to management strategies).

Due to the complexity of Queensland's forests and resultant data issues that could not be addressed in the RFA timeframe, the old growth has not been able to be forest typed (that is, identified by forest ecosystem).

(iii) Wilderness

The JANIS criteria state that 90%, or more if practicable, of the area of high quality wilderness that meets minimum area requirements should be protected in reserves.

The assessment of SEQ wilderness identified ten areas that met the JANIS criteria. All occurrences of wilderness in SEQ on public land would need to be protected to meet the JANIS target.

(iv) National Estate

As defined in the *Australian Heritage Commission Act 1975*, the national estate consists of "those places, being components of the natural environment of Australia, that have aesthetic, historic, scientific or social significance or other special value for future generations as well as for the present community." Indicative national estate places identified through the CRA were assessed against two of the scenarios (A and D). Six major themes were assessed: cultural values, fauna values, flora values, vegetation community values, extensive natural values and geoheritage. Appendix E indicates the protection levels of some major themes in Scenarios A and D only. The identification of indicative national estate values is outlined in the SEQ CRA Report. National estate values occur on public and non-public tenure types and some values, such as vegetation community richness, occur mostly on non-public land. Geoheritage is already well represented in the existing reserve system and can be improved by only a relatively small extent on public land.

5.2 Private Forest Yield

Currently, over 60% of the SEQ native timber harvest is drawn from private forest. As data on the future potential harvesting potential of SEQ private forests is limited, an inventory of private forest resources was undertaken as part of the CRA process[17]. This inventory estimated ongoing sustained wood flow from private forest to be in the range of 215,000m^3-45,000m^3 per annum. The project report, however, acknowledges unavoidable limitations in its methodology. In addition, key stakeholder groups contest its policy and other assumptions, as well as its outcomes.

In view of the current importance of private forests as a native timber source, any additional work to inform RFA negotiations should recognise that the 'private forest' category includes a range of land management approaches (from managed production forests to sale of wood incidental to land clearance). Further, it is clear that the annual private resource output reflects the aggregated decisions of many individual land holders and that caution

[17] Report of Project SE 1.4 *Private Forest Inventories*; Queensland/Commonwealth governments.

is needed in estimating outcomes. For the purposes of this paper, the calculation of the SEQ native timber baseline assumes a straight-line reduction in the private forest resource towards 45,000m^3 in 2020, allowing for an outcome at the lower end of the range estimated by the Private Resource Inventory. As noted above, other assumptions are clearly also possible: for illustrative purposes the baseline and Scenarios C and E have been remodelled assuming a 'stepped' reduction in private resource to 100,000m^3 by 2010. In employment terms, this change in assumptions would move employment to around 1290 in 2000 and remain above 1000 by 2020. This compares with an employment level under the current baseline of about 780 by 2020. This illustrative remodelling is discussed in more detail in Appendix F.

5.3 Crown Resource Sustained Yield Reductions

The Queensland Government undertook a review of sustained yield in Crown forests in November 1998 (results are summarised in the CRA project SE 1.2 *Public Forest Resource Description and Inventory*). The review found that current harvesting levels of about 109,000m^3 per annum (this figure reflects the 14 allocation zones wholly or partly in the RFA region) should be reduced by about 23% on average in order to achieve sustained yield. The Queensland Government has foreshadowed the phased introduction of the new sustained yield harvesting level: it would thus occur whether or not a SEQ RFA is signed.

RFA negotiations will address the fundamental policy assumptions that underlie the assessment of sustainable yield and will also include a rigorous expert assessment of sustainable yield once relevant policy decisions have been made. These decisions will also take into account the Report of the Expert Panel on Ecologically Sustainable Forest Management[18] of systems and processes in the SEQ region. For the purposes of analysis, the results of the sustained yield review have been built into the baseline.

5.4 Industry Development Potential

The following information, and the subsequent discussion of the baseline derives from ABARE FORUM modelling. FORUM is an economic modelling tool that models the Queensland native timber industry. FORUM draws in turn on data from the timber scheduling system (SKED) developed and operated by Queensland DPI (Forestry). FORUM was developed in consultation with government and industry to assist in considering the impact of possible approaches to RFA development. In contrast to the current Queensland allocation zone system which is non-competitive, FORUM modelling assumes that logs are efficiently distributed on a competitive basis across the allocation zones.

The baseline outlook for the timber industry varies according to whether the achievement of full industry development potential is assumed. FORUM modelling suggests it would be economic at baseline resource levels for two large cluster processing establishments to come online during the 20 year life of an RFA. Additionally, it would be economic for five smaller plants to come online by 2001.

Issues relating to industry development are discussed at 3.7 in this report. For the purpose of developing the baseline economic and social outlook, however, assumptions of the achievement of full industry development potential ("industry development baseline") and of no industry development ("raw baseline") have been modelled.

[18] *Assessment of Systems and Processes for Ecologically Sustainable Forest Management in South East Queensland* April 1999. Report of the ESFM Expert Panel.

5.5 Codes of Practice and Ecologically Sustainable Forest Management

The Queensland Government has recently introduced native timber harvesting codes of practice and improved forest management practices. Combined with improvements to other aspects of Queensland's forest planning and management systems, this could further reduce the quantity of native hardwood available for logging. The extent of any impact, however, would depend on the final shape and nature of the CAR reserve system that results from the RFA. As such, no reduction due to this factor is built into the baseline calculations.

The Queensland Government undertook a review of sawlog availability in Crown forests in November 1998. This review found that current harvesting levels were above sustainable levels and should be reduced by about 23% on average across the region. The Queensland Government has foreshadowed the possible phased introduction of the reduced harvesting levels. These foreshadowed reductions have been built into the baseline of the scenarios described in this Report.

As part of its ongoing forest management responsibilities, the Queensland Government is constantly reviewing operational aspects of Crown forest management, including available volume and the operating conditions as covered by management codes and prescriptions.

Improved forest management practices in Crown wood-producing forests include the introduction of a Code of Practice for Timber Production, Multiple Use Management Planning and Species Management Profiles. Therefore, there is an argument for building a further reduction into the baseline to reflect restrictions on resource availability that may result from the new management systems. However, it is not yet possible to quantify such reductions with precision. Not all the scenarios discussed in this Report include a reduction in resource availability to reflect possible impact of changes in forest management. Scenarios A and D specifically exclude such a reduction from their baseline.

5.6 Calculation of the Wood Supply Baseline

Public and private resource inventories forecast a total of about 309,000m^3 of native sawlogs being processed by mills across the region in 2000, assuming existing reserves. Due to the factors outlined earlier, regional aggregate throughput is modelled to fall to about 175,000m^3 by 2010 and to 123,000m^3 by 2020. Without industry development, the FORUM model forecasts that this could result in an employment level of about 1260 in 2000, reducing to 625 by 2020. With industry development, the employment level at 2020 would be about 780. The impact of baseline resource reductions in terms of employment and of gross value of production (GVP) is shown in Figure 4.

5.7 Social Impact Analysis of Baseline

Based on the FORUM model, it is forecast that, with no industry development, around 400 jobs could be lost across the region in the medium-term (2010) with another 200 being lost in the longer term (2020). The TRCs and the towns within them that may be affected:

- Woodford TRC and the towns of Woodford, Kilcoy and Caboolture
- Maryborough TRC and the towns of Maryborough and Hervey Bay
- Blackbutt TRC and the towns of Linville, Blackbutt, Moore and Kingaroy
- Rockhampton TRC, and the towns of Dingo, Blackwater and Rockhampton
- Cooroy TRC and the towns of Cooroy, Yandina, Nambour and Pomona
- Bundaberg TRC and the towns of Bundaberg and Childers

- Gympie TRC and the town of Gympie
- Gladstone TRC and the towns of Builyan and Gladstone
- Wondai TRC and the towns of Wondai, Kingaroy and Murgon
- Brisbane TRC and the town of Ipswich.

The magnitude of the effect will vary depending on each town's size, how important the timber industry is to that town, and a number of other social and demographic features including relatively high levels of unemployment.

Industry development on the current analysis provides the possibility of employment increases in most of the above TRCs with the exceptions of the Bundaberg, Gladstone, and Rockhampton TRCs.

Figure 4: Baseline Employment and GVP Impact Over Time

DESCRIPTION	YEAR		
Resource ('000m^3)	**2000**	**2010**	**2020**
Crown	115.5	81.4	77.6
Private	193.7	93.4	45.0
TOTAL	**309.2**	**174.8**	**122.6**
Employment			
Without industry development	1261	817	626
With industry development	1261	984	782
Gross Value of Production (GVP) ($m)			
Without industry development	82.5	57.7	47.9
With industry development	82.5	97.0	72.9

CHAPTER 6: INDICATIVE SCENARIOS

6.1 Summary of Indicative Scenarios Presented in this Report

This section summarises the scenarios presented in this report. A table summarising conservation outcomes for all scenarios is at Appendix D, along with bar charts summarising JANIS status of regional ecosystems and vegetation types.

Scenario A: 156,000 hectare addition to existing reserves

Sustainable Crown native forest harvesting to continue under ESFM principles; identification of conservation priorities for a CAR reserve system.

Analysis of this scenario does not allow for the effects of implementation of the Code of Practice for Crown Native Forest Timber Production.

Scenario B: 160,000 hectare addition to existing reserves

Sustainable Crown native forest harvesting to continue under ESFM principles; identification of conservation priorities for a CAR reserve system. Demonstrates a different reserve design from Scenario A.

Scenario C: 330,000 hectare addition to existing reserves

Sustainable Crown native forest harvesting to continue under ESFM principles; identification of conservation priorities for a CAR reserve system.

Analysis of this scenario allows for the effects of implementation of the Code of Practice for Crown Native Forest Timber Production.

Scenario D: 391,000 hectare addition to existing reserves

Sustainable Crown native forest harvesting to continue under ESFM principles; identification of conservation priorities for a CAR reserve system.

Analysis of this scenario does not allow for the effects of implementation of the Code of Practice for Crown Native Forest Timber Production.

Scenario E: 330,000 hectare addition to existing reserves

Same reserve design as Scenario C. Proposes cessation over time of Crown native timber forest harvesting, with a transition to purpose planted trees.

Analysis of this scenario allows for the effects of implementation of the Code of Practice for Crown Native Forest Timber Production.

Scenario F: 500,000 hectare addition to existing reserves

Proposes cessation over time of Crown native timber forest harvesting, with a transition to purpose planted trees.

Analysis of this scenario allows for the effects of implementation of the Code of Practice for Crown Native Forest Timber Production.

Scenario G: 620,000 hectare addition to existing reserves

Illustrates a way of achieving high JANIS protection.

6.2 Overview

The strategic approaches presented in this report do not predetermine either the outcome of the RFA process or pre-empt decisions on reserve tenure arrangements. Scenarios represent areas additional to the existing SEQ reserve system that are priorities for conservation. Land tenure changes are not identified and these scenarios are for illustrative purposes only to focus comments on the issues they raise. None of these scenarios represent the position of either the Commonwealth or Queensland governments. Final outcomes are yet to be negotiated, and under the RFA, they will include areas agreed by both governments proposed as dedicated and informal reserves, and areas to be protected by management prescriptions.

These scenarios should be read in conjunction with the strategic issues set out in Chapter 3 of this report. They are presented to illustrate the likely impact of differing scales and emphases on 'protection' while the form of such protection remains to be determined. The Commonwealth and Queensland governments will take feedback on these indicative scenarios into account when negotiating the RFA.

The following scenarios are based on various interpretations of the CAR reserve criteria or on other perceived conservation priorities, such as the protection of rainforest and wet sclerophyll forest despite the current protection of rainforest through management prescription. The key environmental values referred to are regional ecosystems, old growth forest and wilderness, which are described in the CRA Overview Report. The regional ecosystems and land zones are described in greater detail in CRA Project report 1.1.4 – *Forest Ecosystem Mapping and Analysis, Part B. Regional Ecosystems*. Lists of priority flora and fauna and their representation within the scenarios were determined through consultation with experts. The scenarios are preliminary illustrations of areas important for these values. Therefore, there may be minor differences in the data sets on which they are based and on analyses of the original data sets. Assessments of the National Estate values within two of the scenarios are included due to Commonwealth obligations under the *Australian Heritage Commission Act 1975.*

6.3 Scenario A

6.3.1 Description

This approach would identify approximately 156,000 hectares for additional protection in SEQ (Scenario A Map).

Scenario A focuses on endangered, rare and vulnerable ecosystems, consistent with the JANIS criteria. Other environmental values such as old growth, wilderness and national estate are not explicitly identified in this scenario, although they are protected incidentally where they occur in conjunction with the forest ecosystems. Scenario A identifies for protection those areas with priority ecosystems abutting existing National Parks or where reasonably large areas of priority ecosystems occur.

6.3.2 Conservation Outcomes

Scenario A identifies areas for protection additional to the existing reserve system which would protect 13 ecosystems (including one rare and two vulnerable ecosystems) to their JANIS target levels (see JANIS figures and regional ecosystem figure at Appendix D). Overall, 39% of the ecosystems meet targets under this scenario. Of the 86 ecosystems that can reach their JANIS target on Crown forested land, 67% meet target in this scenario.

Analysis of ecosystems by vegetation type (dry sclerophyll, wet sclerophyll, rainforest, other forest and non-forest) shows that Scenario A improves the comprehensiveness of all ecosystems except non-forest (see figure at Appendix D).

Scenario A improves old growth protection to 58% of the total old growth remaining on all tenures (or approximately 83% of old growth on Crown forested land).

Approximately 82% of the wilderness identified in SEQ would also be protected. The representation of all indicative national estate values except geoheritage is improved.

6.3.3 Potential Impact on the Timber Industry

Under Scenario A, logs sourced from Crown native forests would total about 100,000m^3 (including optional logs) in the year 2000, reducing to 69,000m^3 by 2020. Without industry development potential being realised, this would produce an employment outcome of about 1120 in the year 2000, reducing to about 590 by 2020.

FORUM analysis shows that all industry development potential previously indicated would come online. However, with the reducing resource available, by the end of the RFA period such plants would be forced to operate at less than full capacity. If this industry development potential is assumed to be realised under Scenario A, an employment outcome of about 740 in 2020 could result. Scenario A impacts on the SEQ native timber industry are illustrated in Figure 5.

Figure 5: Scenario A Potential Impacts on the SEQ Native Timber Industry

DESCRIPTION	YEAR		
Resource ('000m^3)	**2000**	**2010**	**2020**
Crown	99.9	67.1	68.7
Private	193.7	93.4	45.0
TOTAL	**293.6**	**160.5**	**113.7**
Employment			
Without industry development	1225	766	591
With industry development	1225	945	741
Gross Value of Production ($m)			
Without industry development	79.8	55.2	46.2
With industry development	79.8	91.2	68.7

6.3.4 Impact on Other Wood Products

Approximately 10% of the resource area for other wood products would intersect with new reserves under this scenario.

6.3.5 Relationship to Non-Timber Industry Uses

As no tenure decisions have been made, the following section is only an indication of the possible intersection of Scenario A with non-timber uses of SEQ forests. It should not be interpreted as showing areas that would necessarily be affected.

(i) Mining

Proposed new reserves under Scenario A could intersect with 18,343 hectares of SEQ land of moderate to high mineral potential and with 40,793 hectares of mineral tenements.

(ii) Apiculture

Areas selected for additional protection under Scenario A could intersect with approximately 152,000 hectares (18%) of the SEQ potential honey production area and 108,000 hectares (or 15%) of the potential apiary build area.

(iii) Grazing

The most significant area for cattle grazing in terms of head of cattle under the baseline is the Maryborough area. Under Scenario A, 68,913 hectares (18%) of SEQ land under a Stock Grazing Permit, Term Lease or Permit to Occupy could intersect with proposed new reserves.

(iv) Foliage Collection

About 4760 hectares of existing area accessed under foliage collection permits could intersect with proposed new reserves under Scenario A.

(v) Recreation

The areas proposed for additional protection intersect with areas of high recreational site significance (a combination of popularity, visitation, quality and condition) for 28% of four wheel driving, 22% of horse riding and 11% of mountain bike riding sites. No trail bike riding areas of significance would be affected.

6.3.6 Social Analysis

When compared to the baseline with no industry development, employment losses in the short-term could affect the TRCs of Brisbane, Cooroy and Rockhampton. In the medium-term, employment loss could further affect towns in the Bundaberg, Cooroy and Woodford TRCs. With industry development, the employment impact on towns would be generally lessened, and some towns may not be affected.

6.4 Scenario B

6.4.1 Description

This scenario identifies an area of about 160,000 hectares for additional protection. While similar in total extent to Scenario A, it illustrates that different approaches to reserve design are possible.

This scenario sets out to ensure that areas selected and existing conservation reserves contain as many ecosystems as possible and these are replicated throughout their respective geographical ranges. There has been no attempt to reach percentage thresholds for any particular ecosystem.

Scenario B is presented to illustrate a different approach to reserve design from that of Scenario A. While no economic and social analysis was undertaken of Scenario B, the nature, extent and distribution of social and economic impacts could vary from those reported for Scenario A.

6.4.2 Conservation Outcomes

Scenario B, in conjunction with existing conservation reserves, samples 140 of a maximum achievable 141 regional ecosystems. The areas selected sample, whenever possible, all ecosystems throughout their geographic and ecological ranges.

Scenario B would protect 10 additional ecosystems (including one vulnerable ecosystem) to their JANIS target levels (see Appendix D – JANIS figures and regional ecosystems figure). Overall, 37% of the ecosystems meet targets under this scenario. Of the 86 ecosystems that can reach their JANIS target on Crown forested land, 64% meet target in this scenario.

Analysis of ecosystems by vegetation type (dry sclerophyll, wet sclerophyll, rainforest, other forest and non-forest) shows that Scenario B improves the comprehensiveness of all ecosystems except non-forest (see figure at Appendix D).

Under this Scenario, 57% of remaining old growth (or around 81% of old growth on Crown forested land) and 73% of the total area of wilderness delineated in the region are contained within the areas selected and existing conservation reserves.

6.5 Scenario C

6.5.1 Description

Scenario C identifies approximately 330,000 hectares for additional protection.

Special consideration has been given to rainforest and wet sclerophyll ecosystems and occurrences of endangered, vulnerable and rare ecosystems, and plant species subject to threatening processes, subject to reserve design principles.

Selection has been based upon capturing as many conservation values as possible within areas selected (i.e. application of an efficiency principle). Under this rule, it is assumed that outlying conservation values (e.g. small localised patch of a vulnerable ecosystem) could be protected through other mechanisms such as prescription within a management plan.

6.5.2 Conservation Outcomes

Scenario C, in conjunction with existing conservation reserves, contains samples of all forest ecosystems and plant and animal species known to occur within State Forest and timber reserve and existing National Parks. The areas selected sample, wherever possible, all forest ecosystems throughout their respective geographic and ecological ranges as well as at least three separate known populations of priority fauna species.

This scenario identifies areas for protection additional to the existing reserve system that would protect an additional 23 ecosystems (including one rare and one vulnerable ecosystem) to their JANIS target levels (see JANIS tables and regional ecosytem figure at Appendix D). Overall, 46% of the ecosystems meet targets under this scenario. Of the 86 ecosystems that can reach their JANIS target on Crown forested land, 79% meet target in this scenario.

Analysis of ecosystems by vegetation type (dry sclerophyll, wet sclerophyll, rainforest, other forest and non-forest) shows that Scenario C would improve the comprehensiveness of all ecosystems except non-forest (see figure at Appendix D).

Under this scenario, 61% of remaining old growth (or approximately 88% of old growth on Crown forested land) and 87% of the total area of wilderness delineated in the region are contained within the areas selected and existing conservation reserves.

6.5.3 Potential Impact on Timber Industry

Of the approximately 330,000 hectares selected for additional protection under this scenario, about 276,000 hectares come from areas currently available for timber production, with approximately 54,000 hectares from areas where logging is currently excluded by prescription. Under this scenario, Crown timber would be supplied to industry on a sustained yield basis.

The FORUM model indicates utilisation of the Crown resource as set out in Figure 6. Predicted total employment falls from about 1100 to about 550 over the 20 year RFA period.

FORUM analysis predicts that one large and five smaller processing plants would come online under this scenario. However, by 2020, only two of the small cluster processors would be operating at full capacity and two cluster processors may no longer be viable.

Figure 6: Scenario C Potential Impacts on the SEQ Native Timber Industry

DESCRIPTION	YEAR		
Resource ('000m^3)	**2000**	**2010**	**2020**
Crown	48.0	32.3	30.0
Private	193.7	93.4	45.0
TOTAL	**241.7**	**125.7**	**75.0**
Employment			
With industry development	1,062	795	552
Gross Value of Production ($m)			
With industry development	70.5	74.4	48.6

6.5.4 Impact on Other Wood Products

The additional areas to be protected under this scenario could intersect with about 30% of the main SEQ resource area for other wood products.

6.5.5 Relationship to Non-Timber Industry Uses

(i) Mining

Areas proposed for addition protection could intersect with the following areas of medium-high and high minerals potential – about 15% of the base metals potential areas; about 5% of the gold potential areas; about 10% of the oil shale mineral potential areas, and about 25% of potential areas for building stone.

Additionally, the selected areas could intersect with one producing mine, one identified major mineral occurrence, five large rock and sand quarries, thirteen mineral and extractive licences, and four mineral licence application areas.

(ii) Apiary

The selected areas could intersect with approximately 322,000 hectares, or 37% of the potential honey production area and 225,000 hectares or 36% of potential apiary build areas.

(iii) Grazing

The additional areas to be protected under this scenario could have a significant intersection with 182 of the 567 grazing leases and permits across SEQ State forests and timber reserves. The total area of this potential intersection is about 145,000 hectares, or 38% of the forested land under a Term Lease, Stock Grazing Permit or Permit to Occupy in SEQ.

(iv) Foliage

About 27,000 hectares of the additional protected areas could intersect with foliage collection activity, representing about 31% of the existing area accessed under foliage collection permits.

(v) Recreation

The areas proposed for additional protection intersect with areas of high recreational site significance (a combination of popularity, visitation, quality and condition) for around 33% of the four wheel driving and trail bike riding sites, and 5% of mountain bike riding sites, and around 15% of the horse riding sites.

6.5.6 Social Analysis

Scenario C when compared with the baseline with industry development suggests significant employment losses in both the medium- (2010) and long-terms (2020). In the medium-term, employment losses are most likely to affect towns in the TRCs of Brisbane, Bundaberg, Gladstone, Maryborough and Gympie, and to a lesser extent, Rockhampton, Woodford and Cooroy. In the longer-term, towns in the TRCs of Gatton, Blackbutt and Wondai could also be affected.

6.6 Scenario D

6.6.1 Description

Scenario D focuses on selecting additional areas of old growth forest and common ecosystems to Scenario A to meet JANIS targets. It also improves the adequacy of common ecosystems that are poorly represented in the existing reserve system. This scenario identifies for protection large areas of multiple values, including those contiguous with existing National Parks (i.e. those areas identified in Scenario A), and where reasonably large areas of these values occur. This approach would add a total area of approximately 391,000 hectares to the existing SEQ reserve system (Scenario D Map).

6.6.2 Conservation Outcomes

The areas identified for protection in this Scenario improves the comprehensiveness and adequacy of the existing reserve system. This would protect an additional 28 ecosystems (including the one rare and two vulnerable ecosystems protected in Scenario A) to JANIS target level over those protected in the existing reserve system, i.e. a total of 73 regional ecosystems of the 86 that can be achieved on public land (see figure and JANIS figure at Appendix D).

This Scenario would also protect other ecosystems protected only minimally under Scenario A. Overall, around half (50%) of the regional ecosystems meet targets under this scenario. Of the 86 ecosystems that can reach their JANIS target on Crown forested land, 85% meet target in this scenario.

Analysis of ecosystems by vegetation type (dry sclerophyll, wet sclerophyll, rainforest, other forest and non-forest) shows that Scenario D improves the comprehensiveness of the forest ecosystems, i.e. rainforest, wet sclerophyll and, to a lesser extent, dry sclerophyll (see figure at Appendix D).

Scenario D would add further areas of old growth to the reserve system and achieve protection of approximately 63% of old growth forest (see figure at Appendix D).

Wilderness protection is also improved under Scenario D, bringing the proportion protected on public land to 86% (Appendix D – summary of JANIS). All wilderness areas are represented within Scenario D, although all occurrences on public land would be required to meet the JANIS target.

The protection of indicative national estate values is further improved with approximately 80-90% of values available on public land captured under this scenario (see figure at Appendix D).

6.6.3 Potential Impact on the Timber Industry

Under Scenario D, the volume of Crown sawlogs would reduce to 69,000m^3 in 2000, and 40,000m^3 by 2020. Without industry development, these reductions would mean an employment outcome of about 1130 in the short term and 485 by 2020.

ABARE's FORUM analysis shows that it would only be economic at these resource levels to establish one of the larger cluster processing plants, at Ipswich, and that such a plant would only be operating at 50% capacity by 2020. Five smaller cluster processors would remain economic at this resource level. If this level of industry development is assumed, full-time equivalent employment would total about 600 by 2020. Scenario D impacts are illustrated in Figure 7.

Figure 7: Scenario D Potential Impacts on the SEQ Native Timber Industry

DESCRIPTION	YEAR		
Resource ('000m^3)	**2000**	**2010**	**2020**
Crown	69.1	41.0	39.6
Private	193.7	93.4	45.0
TOTAL	**262.81**	**134.4**	**84.6**
Employment			
Without industry development	1137	676	489
With industry development	1137	838	605
Gross Value of Production ($m)			
Without industry development	74.4	50.3	40.6
With industry development	74.4	78.8	54.4

6.6.4 Other Wood Products

The additional areas to be protected under this scenario could intersect with about 118,000 hectares, representing around 36% of SEQ forest from which other forest products are drawn.

6.6.5 Relationship to Non-Timber Industry Uses

As no tenure decisions have been made, the following section is only an indication of the possible intersection of Scenario D with non-timber uses of SEQ forests. It should not be interpreted as indicating areas that would necessarily be affected.

(i) Mining

Proposed new reserves under Scenario D could intersect with 64,168 hectares of SEQ land of moderate to high mineral potential and with 99,781 hectares of mineral tenements.

(ii) Apiculture

Under Scenario D, the selected areas could intersect with approximately 372,782 hectares (43%) of the potential honey production area and with 295,000 (42%) of potential apiary build areas.

(iii) Grazing

Under Scenario D, around 193,000 hectares (51%) of SEQ land under a Stock Grazing Permit, Term Lease or Permit to Occupy could intersect with proposed new reserves.

(iv) Foliage Collection

Four areas totalling around 18,000 hectares (20%) accessed under foliage collection permits could intersect with proposed new reserves under Scenario D.

(v) Recreation

The areas proposed for additional protection intersect with areas of high recreational site significance (a combination of popularity, visitation, quality and condition) for 39% of four wheel driving, 14% of mountain bike riding, 28% of horse riding and 28% of trail bike riding sites.

6.6.6 Social Analysis

When compared to the baseline with no industry development, employment losses in the short-term may affect the TRCs of Cooroy, Gympie and Rockhampton. In the medium-term, employment loss may further affect towns in the Woodford, Cooroy, Bundaberg, Brisbane, and to a lesser extent, the Maryborough and Gatton TRCs. With industry development, the employment impact would be significantly reduced for towns in all of the above TRCs.

6.7 Scenario E

6.7.1 Description

Scenario E identifies approximately 330,000 hectares for additional protection (the same as for Scenario C). However, because this scenario is based on a 'transition' approach, over the term of the RFA conservation gains are likely to be greater than under Scenario C.

6.7.2 Conservation Outcomes

The immediate conservation outcomes of this scenario are the same as those under Scenario C.

6.7.3 Potential Impact on the Timber Industry

Scenario E proposes an area of around 330,000 hectares of State forest and timber reserve to be immediately unavailable for logging. This area is made up of about 276,000 hectares from areas currently available for logging and about 54,000 hectares from areas where logging is currently excluded by prescription. Crown sawlog supply would be maintained at current levels for varying periods across the SEQ region.

FORUM analysis shows that one of the larger cluster processors and all five of the smaller cluster processors are modelled to come on line under this scenario. However, by 2020, two of the smaller processors would no longer be viable and all other processors would be operating at below 50% of capacity. FORUM predicted employment falls from about 1285 to about 490 over the 20 year RFA period. Scenario impacts on the timber industry as modelled by FORUM are summarised in Figure 8.

Figure 8: Scenario E Potential Impacts on the SEQ Native Timber Industry

DESCRIPTION	YEAR		
Resource ('000m^3)	**2000**	**2010**	**2020**
Crown	131.8	44.3	23.8
Private	193.6	93.4	45.0
TOTAL	**325.4**	**137.7**	**68.8**
Employment			
With industry development	1285	852	489
Gross Value of Production ($m)			
With industry development	85.3	80.1	44.8

While Scenarios C and E propose the same areas for additional protection, they differ significantly in their basis for Crown sawlog supply to industry: Scenario C supplies sawlogs on a sustained yield basis, Scenario E on a transition basis.

The FORUM analysis provides a comparison between these two scenarios, however aspects of the modelling may obscure comparison of Crown sawlog availability for these two scenarios. Figure 9 provides a direct comparison of possible compulsory Crown sawlog availability under the two scenarios, assuming a continuation of the existing allocation policy. Total compulsory sawlog availability is shown for the 12 allocation zones that make up the bulk of the SEQ RFA region.

Figure 9 shows that, under the 'transition' approach, total Crown sawlog supplies would be maintained at or above the estimated sustained yield level of Scenario C until year 2011. For 16 years of the RFA period, Crown sawlog supplies would be maintained at more than 80% of the Scenario C estimated sustained yield.

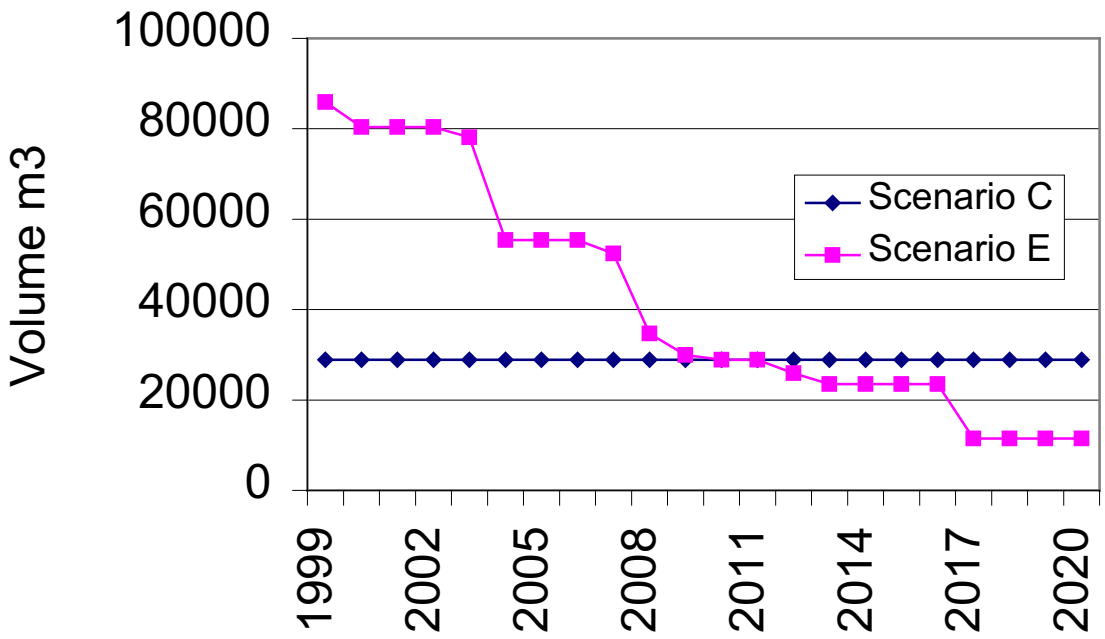
6.7.4 Relationship to other Wood Products and Non-Timber Industry Uses

Selected areas intersect with approximately 30% of the current Crown resource area for other wood products. Because the same additional areas to be protected under this scenario are identified under Scenario C, the immediate impacts would be the same. As logging ceases across the region, additional areas could become available for consideration as protected areas (to be managed primarily for conservation purposes).

6.7.5 Social Analysis

Scenario E, when compared with the baseline (assuming industry development), suggests significant employment losses in the timber industry in both the medium- (2010) and longer-terms (2020). In the medium-term, employment losses may affect towns in the TRCs of Brisbane, Bundaberg, Gympie, Gladstone, Cooroy, Maryborough, Rockhampton and to a lesser extent, Woodford. In the longer-term, towns in the TRCs of Gatton, Blackbutt and Wondai could also be affected.

Figure 9: Projected Crown Native Forest Sawlog Yield - Scenarios C and E to 2020



6.8 Scenario F

6.8.1 Description

Scenario F proposes an area of around 500,000 hectares of State forest and timber reserve be immediately unavailable for logging. This area is made up of about 440,000 hectares from areas currently available for logging and about 60,000 hectares from areas where logging is currently excluded by prescription. Crown timber would be supplied to industry on a 'transition policy' basis.

As for Scenario G below, Scenario F recognises that meeting JANIS targets to the extent possible on public land would require reservation of most of the State forests and timber reserves in the SEQ region.

The scenario maximises the inclusion of forest areas containing significant patches of rainforest, wet sclerophyll forests and also moist topographic islands. The scenario takes account of the uniqueness of the subtropical rainforests of SEQ in global terms and as habitat. It also recognises its high species richness, restricted extent in SEQ and long recovery time from disturbance. Its occurrence in the SEQ region is at the northern limit of its main distribution in Australia.

The reserve system for this scenario samples all regional ecosystems that occur in State forests and on timber reserves. Similarly, some sites for all species of flora and fauna recorded for State Forests and conservation reserves are included. This scenario seeks to replicate ecosystems and populations across their range.

6.8.2 Conservation Outcomes

Scenario F identifies areas for protection additional to the existing reserve system which would protect 30 additional ecosystems (including one rare and two vulnerable ecosystems) to their JANIS target levels (see figures at Appendix D). Overall, 51% of the ecosystems meet targets under this scenario. Of the 86 ecosystems that can reach their JANIS target on Crown forested land, 87% meet their targets in this scenario.

Analysis of ecosystems by vegetation type (dry sclerophyll, wet sclerophyll, rainforest, other forest and non-forest) shows that Scenario F improves the comprehensiveness of all ecosystems except non-forest (see figure at Appendix D), including all wet sclerophyll forest targets that can be met on Crown forested land.

Scenario F improves old growth protection to 64% of the total old growth remaining on all tenures (or approximately 93% of old growth on Crown forested land).

Approximately 90% of the wilderness identified in South East Queensland would also be protected, meeting the JANIS target for this CAR value.

6.8.3 Potential Impacts on the Timber Industry

This scenario proposes an area of around 500,000 hectares for additional protection. This area is made up of about 440,000 hectares from areas available for logging, and about 60,000 hectares from areas where logging is currently excluded by prescription. Crown timber would be supplied to industry on a 'transition policy' basis. Under this scenario, by around 2011, Crown sawlog supply would drop to zero.

FORUM analysis estimates that one of the larger cluster processors and all five of the smaller cluster processors come online under this scenario. However, by 2020, three of the smaller processors are no longer viable and the three remaining processors would be operating at less than 50% of their capacity. FORUM predicts employment falls from about 1160 to about 350 over the 20 year RFA period. Scenario impacts on the native timber industry as modelled by FORUM are summarised in Figure 10.

Figure 10: Scenario F Potential Impacts on the SEQ Native Timber Industry

DESCRIPTION	YEAR		
Resource ('000m^3)	**2000**	**2010**	**2020**
Crown	78.9	14.4	0
Private	193.6	93.4	45.0
TOTAL	**272.5**	**107.8**	**45.0**
Employment			
With industry development	1165	706	351
Gross Value of Production ($m)			
With industry development	76.2	66.1	29.7

6.8.4 Impact on Other Wood Products

The approximately 500,000 hectares that would be immediately protected under this scenario could intersect with about 55% of the main SEQ resource area for other wood products.

6.8.5 Relationship to Non-Timber Industry Uses

(i) Mining

Areas proposed for additional protection under this scenario could intersect with the following identified areas of medium-high and high mineral potential – about 15% of the base metals mineral potential areas and significant areas of other base metals potential; about 46% of the gold volcanogenic and 8% of the gold (veins) mineral potential areas; about 3% of the quarry rock potential areas and about 27% of the potential building stone areas.

Additionally, the areas could intersect with one operating mine, one identified major mineral occurrence, six large rock and sand quarries, 25 mineral and extractive licences and nine mineral licence application areas.

(ii) Apiary

A total of approximately 475,000 hectares or 55% of the potential honey production area and 388,000 hectares or 55% of potential apiary build areas intersect with areas proposed for additional protection under this scenario.

(iii) Grazing

The areas proposed for additional protection under this scenario could significantly intersect with 279 of the 567 grazing leases and permits across State forests and timber reserves in SEQ. The total area of potential intersection could be about 212,000 hectares or 56% of the forested land under a Term Lease, Stock Grazing Permit, or Permit to Occupy in SEQ.

(iv) Foliage

The areas proposed for additional protection under this scenario could intersect with 33,000 hectares or 37% of the area accessed under foliage collection permits.

(v) Recreation

Areas proposed for additional protection under this Scenario could intersect with areas of high recreational site significance (a combination of popularity, visitation, quality and condition) in SEQ State forests and timber reserves for around 60% of the four wheel driving and trail bike riding sites, around 30% of mountain bike riding sites, and around 50% of the horse riding sites.

6.8.6 Social Analysis

When compared with the baseline, Scenario F suggests significant employment losses in the timber industry in both the medium (2010) and long-terms (2020). In the medium term, forecast employment losses may affect towns in the TRCs of Brisbane, Bundaberg, Gladstone, Gympie, Maryborough and, to a lesser extent, Rockhampton, Cooroy, Blackbutt and Woodford. In the longer-term, towns in the TRCs of Beaudesert, Gatton and Wondai could also be significantly affected.

6.9 Scenario G

6.9.1 Description

This 620,000 hectare scenario includes most State forest and timber reserve in the region, the major exceptions being remnant areas in the vicinity of hoop pine and exotic pine plantations. Consequently, the protection of regional ecosystems, old growth and wilderness are close to the maximum achievable on Crown forested land.

Scenario G builds upon Scenario F by identifying additional areas, particularly for some dry sclerophyll ecosystems.

As Scenario G is included only to illustrate a way of achieving a high degree of JANIS protection, analysis of this scenario does not present economic and social aspects.

6.9.2 Conservation Outcomes

Scenario G identifies areas for protection additional to the existing reserve system which would protect an additional 36 ecosystems (including one rare and two vulnerable ecosystems) to their JANIS target levels (see Appendix D). Overall, 55% of the ecosystems meet targets under this scenario. Of the 86 ecosystems that can reach their JANIS target on Crown forested land, 94% meet their targets in this scenario.

Analysis of ecosystems by vegetation type (dry sclerophyll, wet sclerophyll, rainforest, other forest and non-forest) shows that Scenario G improves the comprehensiveness of all ecosystems except non-forest (see figure at Appendix D).

Scenario G improves old growth protection to 65% of the total old growth remaining on all tenures (or approximately 94% of old growth on Crown forested land).

Approximately 90% of the wilderness identified in SEQ would also be protected, meeting the JANIS target for this CAR value.

CHAPTER 7: TOWARDS A REGIONAL FOREST AGREEMENT FOR SOUTH EAST QUEENSLAND

The SEQ RFA will have a number of important characteristics. It will:

- clearly describe the commitments of both governments
- clearly delineate responsibilities for implementing specific commitments and provide timetables and milestones
- provide for a review of both governments' performance every five years.

Governments will make commitments in the Regional Forest Agreement to actions including:

- agreement to the means by which the two governments will pursue ecologically sustainable forest management systems and processes
- defining and describing the means for conserving those areas which form a comprehensive, adequate and representative reserve system
- agreement on industry development strategy
- operational mechanisms for the Agreement
- guidance for implementation of the Agreement, including review mechanisms, monitoring and reporting provisions, funding agreements, data agreements, and mechanisms for continuing public participation and consultation.

A key component of the RFA will be arrangements for the Ecologically Sustainable Forest Management of forests in the SEQ region. Following public comment, and after considering the recommendations of the ESFM Expert Panel, the Commonwealth and Queensland governments will agree on initiatives to deliver ESFM in the region. These will be elaborated in the RFA and will include arrangements for monitoring and review. The ESFM initiatives proposed for the SEQ RFA region will be based on both governments' consideration of the ESFM Expert Panel's final report.

RFAs for other regions illustrate how these and other elements have been incorporated in an agreement. These Agreements can be found on the Internet at http://www.rfa.gov.au.

CHAPTER 8: GLOSSARY

Biological Diversity

The variety of all life forms: the different plants, animals and micro-organisms, the genes they contain, and the ecosystems they form. Biological diversity is usually considered at three levels: genetic diversity, species diversity, and ecosystem diversity. It is sometimes considered at the level of landscape diversity.

Comprehensive, Adequate and Representative (CAR) Reserve System

A reserve system based on the principles of comprehensiveness, adequacy and representativeness, as defined in the National Forest Policy Statement, 1992. The reserve system comprises four elements; dedicated reserves, informal reserves, values protected by prescription and private land arrangements.

Dedicated Reserves

Reserves where the management regime equates to specific protected area management categories defined by the IUCN Commission for National Parks and Protected Areas—categories I, II, III and IV. Security of tenure, as demonstrated if parliamentary action by Commonwealth, State or Territory governments is required for revocation of the reserve, is fundamental to the establishment and management of dedicated reserves.

Ecologically Sustainable Forest Management (ESFM)

The ecologically sustainable use and management of the forest estate. The National Forest Policy Statement adopts three requirements as the basis for ecologically sustainable forest use and management: maintaining the ecological processes in forests (the formation of soil, energy flows, and the carbon, nutrient and water cycles); maintaining the biological diversity of forests; and optimising the benefits to the community from all uses of forests within ecological constraints.

Ecosystem

The aggregate of plants, animals and other organisms and the non-living parts of the environment with which these organisms interact.

Gross Value of Production

Calculated by taking the unit of quantities of commodities produced and multiplying by the market price. Unless otherwise specified, gross value of production is calculated at the point of sale. For commodities sold domestically, this is at the market point; for exports it is at the point of export.

Informal Reserves

Reserves that contain and are managed for conservation values that unequivocally contribute to the comprehensive, adequate and representative reserve system. Such reserves have a sound basis in legislation (for example, management plans required under legislation), with provision of opportunity for public comment on changes to reserve boundaries and where decisions on their establishment and alteration are politically accountable. In addition, they must be able to be accurately identified (on maps) and be of sufficient area and adequate design to contribute to the continued viability of the values they seek to protect.

Interim Forest Management Agreement

A SEQ Interim Forest Management Agreement (IFMA) was signed by the Commonwealth and State governments in April 1998. This agreement aims to ensure continued wood supply to industry and prevent foreclosure of options for a comprehensive, adequate and representative reserve system pending an RFA.

JANIS Technical Working Group

A group, comprising conservation scientists and planners from all States, the Northern Territory and the CSIRO, established in 1993 under the auspices of the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Subcommittee (JANIS) to draft national criteria on which to base a comprehensive, adequate and representative forest reserve system in Australia.

National Estate Areas and Places

Natural or cultural areas and places entered on the Register of the National Estate or the Interim List by the Australian Heritage Commission for their aesthetic, historic, scientific or social significance or other special value.

Old Growth Forest

Forest that is ecologically mature and subjected to negligible unnatural disturbance such as logging, roading and clearing. The definition focuses on forest in which the upper stratum, or overstorey, is in the late-mature to overmature growth phases.

Rare Species

Species with small world populations that are not at present endangered or vulnerable but are at risk.

Recovery Plan

A comprehensive plan that details, schedules and costs all actions deemed necessary to support the recovery of a threatened species or ecological community.

Regrowth Forest

Native forest containing a substantial proportion of trees that are in the younger growth phase and are actively growing in height and diameter. Such forest can contain scattered individuals or small occurrences of ecologically mature, or old growth, trees.

Scoping Agreement

Agreement signed by the Commonwealth and Queensland governments on 20 February 1997, establishing the broad parameters for undertaking a comprehensive regional assessment and finalising a regional forest agreement for South East Queensland.

SKED

Timber yield scheduling model developed and operated by the Queensland Department of Primary Industry (Forests).

Sustainable Yield

For a forest, the maximum level of commercial timber (or product mix) that can be ecologically sustained under a given forest management regime.

CHAPTER 9: ABBREVIATIONS AND ACRONYMS

ABARE

Australian Bureau of Agricultural Resource Economics

AGPS

Australian Government Publishing Service

ANZECC

Australian and New Zealand Environment and Conservation Council

CAR

Comprehensive, Adequate and Representative

CRA

Comprehensive Regional Assessment

CSIRO

Commonwealth Scientific and Industrial Research Organisation

ESFM

Ecologically Sustainable Forest Management

FORUM

Forest Resource Use Model

IUCN

International Union for the Conservation of Nature and Natural Resources

JANIS

Joint ANZECC/MCFFA National Forest Policy Statement Implementation Subcommittee

MCFFA

Ministerial Council on Forestry, Fisheries and Aquaculture

RFA

Regional Forest Agreement

SEQ

South East Queensland RFA region

APPENDIX A

QUEENSLAND LEGISLATION AND ITS RELEVANCE TO FOREST MANAGEMENT

This list should be read as including regulations/subordinate legislation made under the following Acts.

Forestry Act 1959

management of State Forests

Land Act 1994

administration of Crown land

Environment Protection Act 1994

general duty of environmental care

Nature Conservation Act 1992

management of National Parks and other protected areas

Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987

management of culturally significant areas

Integrated Planning Act 1997

coordinating and integrating planning at the local, regional and state levels

Local Government Act 1993

powers of Local Government to make local laws

Queensland Heritage Act 1992

conservation of historic heritage

Aboriginal Land Act 1991

providing for indigenous people to be able to claim and be granted land

Recreation Areas Management Act 1988

establishment of a system of recreation areas

State Development and Public Works Organisation Act 1971

impact assessment of development proposals

Sawmills Licensing Act 1936

Licensing of sawmills

Fire and Rescue Authority Act 1990

prevention of and response to fires

APPENDIX B

LIST OF COMMITTEES AND MEMBERS

Steering Committee

Norm Clough	Observer
Rod McInnes	Reference panel representative
Aila Keto	Reference panel representative
Scott Spencer (co-chair)	Department of Natural Resources
Geoff Johnson	Department of Natural Resources
Gary Bacon	Department of Primary Industries
Tony Roberts	Department of Environment and Heritage
Richard Webb (co-chair)	Department of the Prime Minister and Cabinet
Robyn Bromley/Anne McDermott	Department of the Prime Minister and Cabinet
Anne-Marie Delahunt	Environment Australia
Allen Grant	Department of Agriculture, Fisheries and Forestry

Stakeholder Reference Panel

Norm Clough (chair)	lndependent
Rod McInnes	Queensland Timber Board
Aila Keto	Australian Rainforest Conservation Society
Scott Spencer	Department of Natural Resources
Geoff Johnson	Department of Natural Resources
Gary Bacon	Department of Primary Industries
Des Boyland	Department of Environment and Heritage
Warwick Willmott	Department of Minerals and Energy
Tony Roberts	Department of Environment and Heritage
Graham Robertson	Community
Bonny Banks	Cattlemen's Union
Gus McGown	United Graziers' Association
Ian Wallace	Queensland Mining Council
Duncan McMartin	Queensland Beekeepers' Association
Ken McKay	Australian Workers' Union
Keith Scott	Queensland Conservation Council
Virginia Young	Australian Wilderness Society
Selena Walters	Forest Protection Society
Lynette Deveraux	Local Government Association
Bob Weatherall	Goolburri Aboriginal Corporation Land Council
Les Malezer	Foundation for Aboriginal and Islander Research Action
Colin Johnson	Gurang Land Council
Richard Webb	Department of the Prime Minister and Cabinet
Robyn Bromley/Anne McDermott	Department of the Prime Minister and Cabinet
Anne-Marie Delahunt	Environment Australia
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Tim Thelander	Department of Agriculture, Fisheries and Forestry
Michael O'Loughlin (co-chair)	Department of Agriculture, Fisheries and Forestry
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Dan Sun	Bureau of Resource Sciences
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Norm Clough	South East Queensland RFA Reference Panel
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Rebecca Williams	Department of Natural Resources
Rod Channon	Department of the Prime Minister and Cabinet
Michael O'Loughlin	Department of Agriculture, Fisheries and Forestry
Dianne Deanne	Environment Australia

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Rod McInnes	Queensland Timber Board
Aila Keto	Australian Rainforest Conservation Society

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Brad Lewis	Goolburri Land Council
Anje Schimpf	Gurang Land Council
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Richard Webb (co-chair)	Department of the Prime Minister and Cabinet

* Anne McDermott and Malcolm Taylor were members of these committees by virtue of their project manager status. Rod McInnes and Aila Keto attend committee meetings in their capacity as Steering Committee representatives.

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Ruth Adams	Department of Natural Resources
Judy Powell	Department of Environment and Heritage
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Rod McInnes	Queensland Timber Board
Craig Darlington	Foundation for Aboriginal and Islander Research Action
Selena Walters	Forest Protection Society

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Professor Sandra Bowdler	University of Western Australia
Dr Bill Jonas	National Museum of Australia
Dr Brian Egloff	University of Canberra
Dr Mike Pearson	Heritage Management Consultants
Professor Graeme Davison	Monash University
Professor Jim Bowler	University of Melbourne
Professor Cliff Ollier	The Australian National University
Dr Tim Flannery	Australian Museum
Dr Alan Yen	Museum of Victoria
Professor Jamie Kirkpatrick	University of Tasmania
Dr Bryan Barlow	Australian National Herbarium

ESFM Expert Panel

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Assoc. Prof. Mark Burgman	The University of Melbourne
Dr. Steven Cork	CSIRO Wildlife and Ecology
Dr. Marcus Lane	Royal Melbourne Institute of Technology
Dr. Brendan Mackey	The Australian National University
Dr. Robert McCormack	CSIRO Forestry and Forest Products
Dr. John Raison	CSIRO Forestry and Forest Products
Mr. Graham Wilkinson	Forest Practices Board – Tasmania

APPENDIX C

SOUTH EAST QUEENSLAND RFA PROJECTS

Environment and heritage projects

EH 1.1.1A	Forest Vertebrate Fauna Study Stage 1: Data Audit and Gap Assessment
EH 1.1.1B	Forest Vertebrate Fauna Study Stage 1: Systematic Fauna Survey
EH 1.1.2A	Forest Vertebrate Fauna Study Stage 2: Analysis and Reserve Option Example
EH 1.1.2B	Forest Vertebrate Fauna Study Stage 2: Assessment of Habitat Quality for Priority Species
EH 1.1.3	Targeted Flora Survey
EH 1.1.4	Flora Data Analysis
EH 1.1.6	Genetic Diversity and the Design of a Comprehensive, Adequate and Representative (CAR) Reserve System in South East Queensland
EH 1.2A	Forest Ecosystem Mapping and Analysis of the South East Queensland Biogeographic Region: Vegetation Survey and Mapping
EH 1.2B	Forest Ecosystem Mapping and Analysis of the South East Queensland Biogeographic Region: Regional Ecosystems
EH 2.1	Old Growth Assessment, Mapping and Analysis
EH 3.1	Wilderness Assessment, National Estate Wilderness and Extensive Natural Values
EH 5.1.1	National Estate: Compilation and Assessment of Places of Geoheritage Significance
EH 5.1.2	National Estate: Assessment of Extensive Natural Values (Refuges and Succession)
EH 5.1.3	National Estate: Flora Species Values
EH 5.1.4	National Estate: Assessment of Flora Community Values
EH 5.1.5	National Estate: Fauna Species Values
EH 5.1.6	National Estate: Identification Assessment of Places of Natural History Significance
EH 5.2	South East Queensland Cultural Heritage Places and Values (non-Indigenous)
EH 6.1	South East Queensland Cultural Heritage Places and Values (Indigenous)
EH 7.1	World Heritage Assessment and Expert Panel

Economic projects

SE 2.2	Mill Survey
SE 2.5	Wood and Wood Products Industry Background and Situation Analysis
SE 2.6	Review of Value adding/Transformation Opportunities for the South East Queensland Wood and Wood Products Industry
SE 4.1B	Economic Valuation of Forest Recreation and Tourism

Resource/economic and resource projects

SE 4.1A	Forest Recreation and Tourism Assessment
SE 4.2	Forest Grazing, Apiculture and Other Products Description and Assessment
SE 1.1	Appraisal and Accreditation of Wood Yields Methods and Data
SE 1.2A	Public Forest Resource Description and Inventory
SE 1.2B	Public Forest Resource Description and Inventory: Other Wood Products
SE 1.3	Forest Resource Enhancement Opportunities
SE 1.4	Private Forest Inventories
SE 1.5	Commercial Plantation Land Capability Analysis of South East Queensland
SE 3.1	Assessment of Mineral and Extractive Resource Potential
SE 4.3	Water Resources and Management

Social assessment projects

SE 5.1	Post-impact Studies Analysis
SE 5.2	Regional Social Profile Analysis
SE 5.3	Social Case Study Areas
SE 5.4	Resource, Forest Industry and Employee Catchment Analysis
SE 5.1.2	Literature Review of the Impact of Changes in Forest Use on Indigenous Communities
SE 5.2.2	Indigenous Community Issues and Social Profile Case

APPENDIX D

SUMMARY TABLE AND CHARTS OF CONSERVATION OUTCOMES FOR EACH INDICATIVE SCENARIO

Figure D1: Summary of Status and Protection Levels of Regional Ecosystems (REs) in Existing Reserves and Scenarios

			No. of ecosystems with JANIS targets met								
				Scenario							
JANIS status of ecosystem	**JANIS target**	**No. of ecosystems**	**Existing reserve system**	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**Total no. of targets achievable on Crown forested land**
Endangered	100%	8	0	0	0	0	0	0	0	0	0
Rare	100%	18	5	6	5	6	6	6	6	6	6
Vulnerable	60%	26	2	4	3	3	4	3	4	4	6
Common	15%	95	38	48	47	59	63	59	65	71	74
Total ecosystems		**147**	**45**	**58**	**55**	**68**	**73**	**68**	**75**	**81**	**86**

Figure D2: Summary of old growth forest and wilderness in existing reserves and scenarios

		Protection level								
		(Existing reserve system and scenarios A-G)								
JANIS value	**JANIS target**	**Existing reserve system**	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**Total level achievable on Crown forested land**
Old growth forest	60-100%	53%	58%	57%	61%	63%	61%	64%	65%	69%
Wilderness	90%	63%	82%	73%	87%	86%	87%	90%	90%	91%

Figure D3: Percentage of ecosystems classed by JANIS status that meet JANIS target in the existing reserve system and for each scenario, as well as the maximum that can meet target

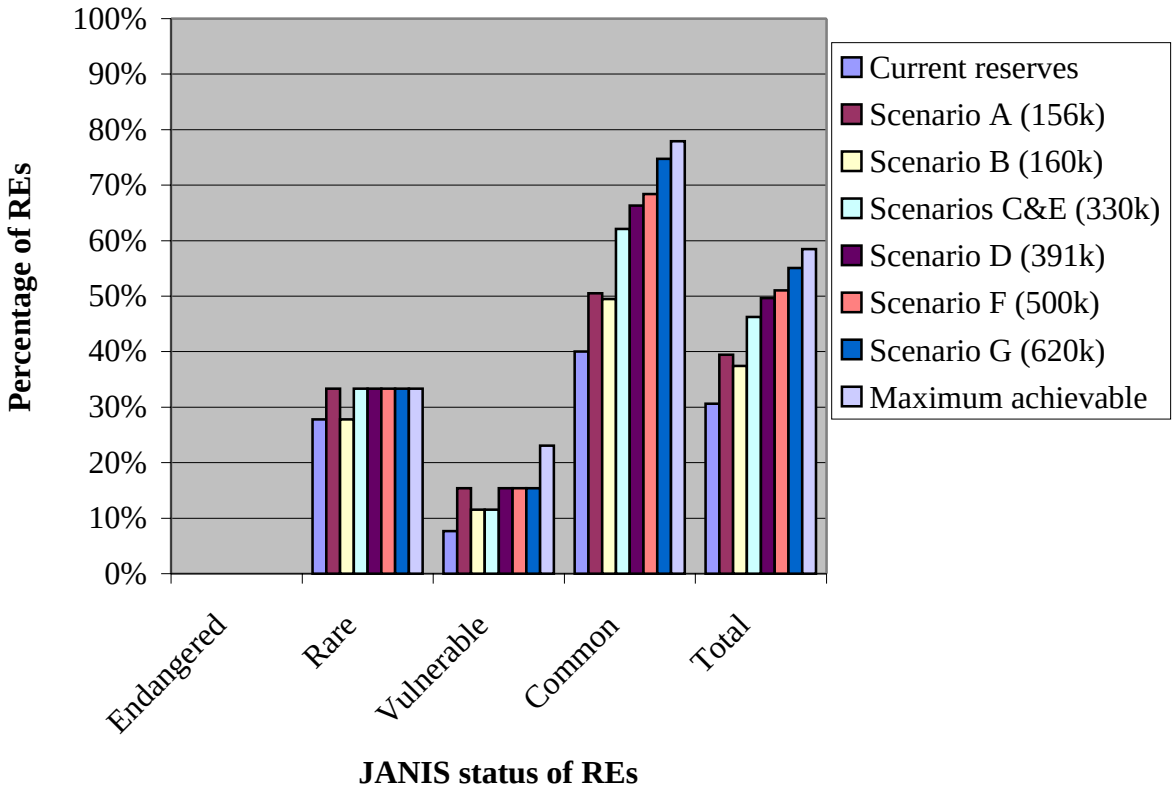
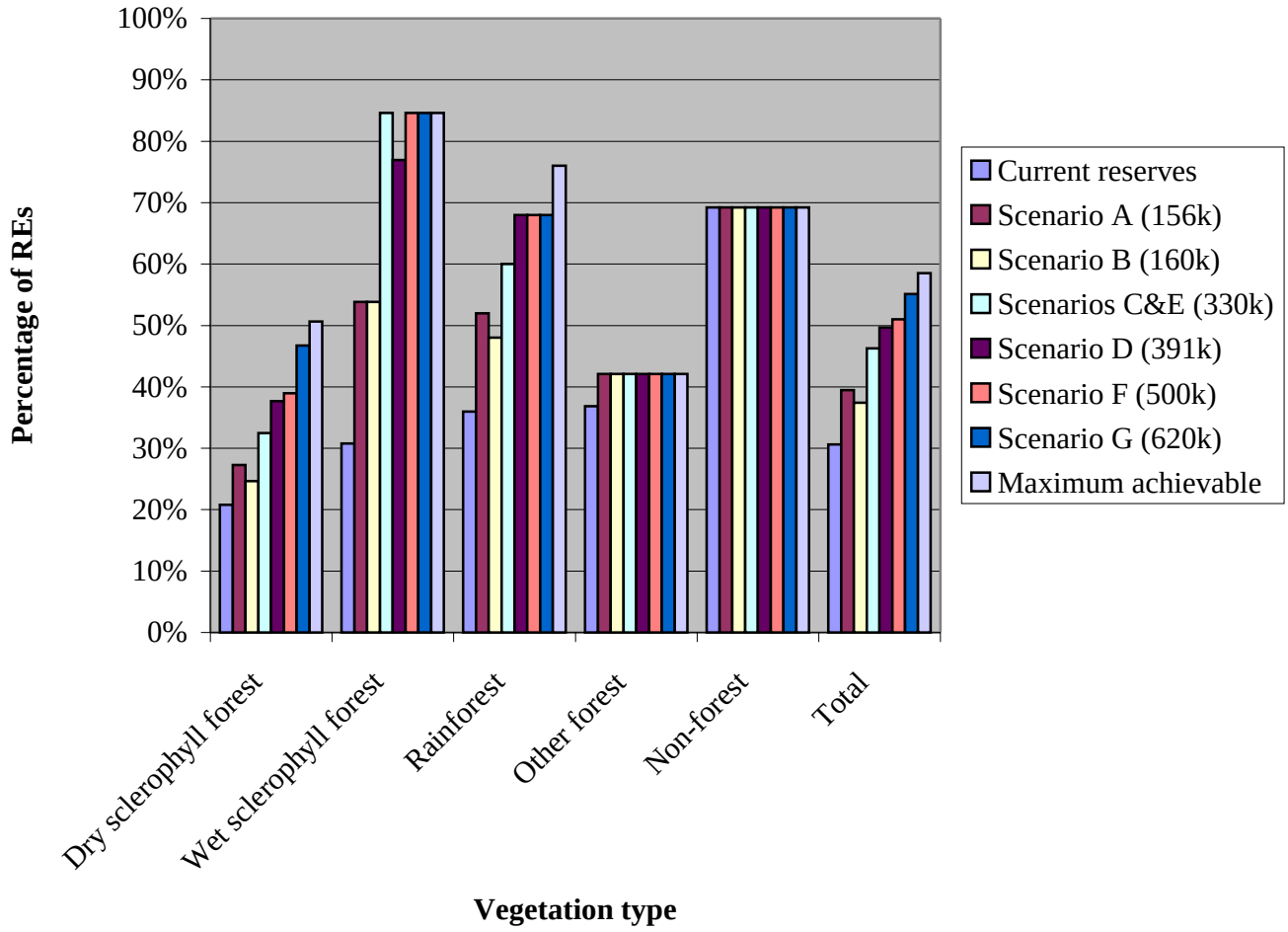


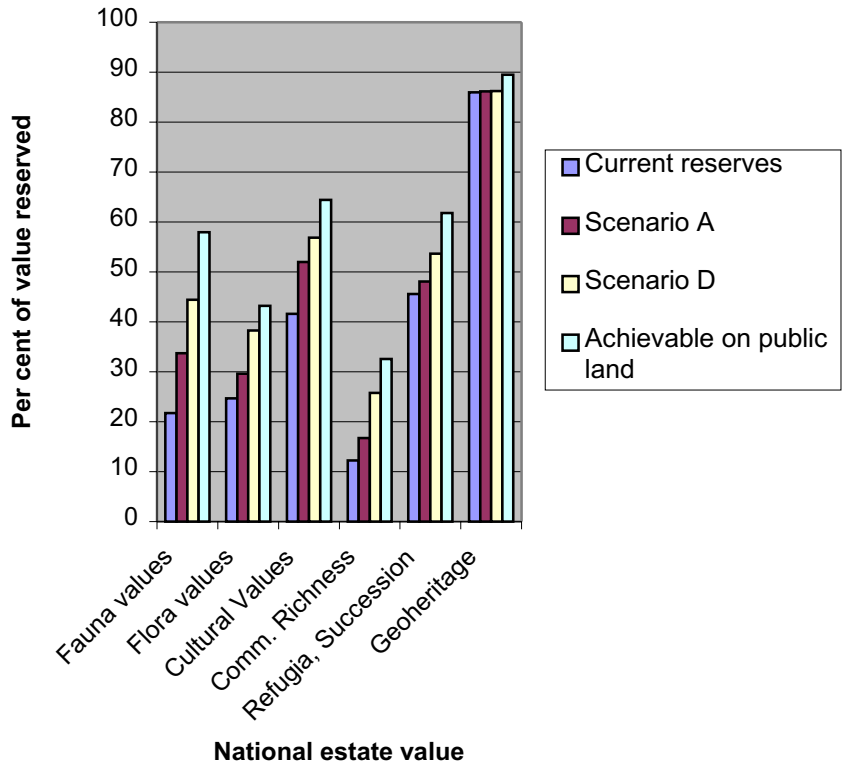
Figure D4: Percentage of ecosystems classed by vegetation type that meet JANIS target in the existing reserve system and for each scenario, as well as the maximum that can meet target and the total number of ecosystems.



APPENDIX E

PROTECTION LEVELS OF SOME NATIONAL ESTATE VALUES: SCENARIOS A AND D

Figure E1: National Estate Values under Existing Reserves and Scenarios A and D



APPENDIX F

IMPACT OF CHANGING THE PRIVATE RESOURCE ASSUMPTION: SCENARIOS A AND E

To illustrate how important varying assumptions about future private resource availability are to the assessment of scenarios, the baseline and two reserve scenarios from this report have been remodelled as examples. Unlike the basis of the modelling presented in Chapter 6 of this report (which assumes a straight-line decline to 45,000m^3 by 2020) the remodelling in this Appendix assumes that private resource would remain at about 200,000m^3 until 2005, reduce to 150,000m^3 for the years 2005-2009 and then to 100,000m^3 from 2010 onwards. These alternative future private resource assumptions have been modelled for the baseline (see Chapter 5 of this report) and for Scenarios A and E presented in Chapter 6.

(i) Baseline

At the baseline, sawlog inputs would reduce from 324,000m^3 at 2000 to 178,000m^3 by 2020. This compares with current baseline input of 309,000m^3 at 2000, reducing to 123,000m^3 by 2020. At these resource levels, industry development possibilities already outlined for the baseline would become much firmer, with a number of sawmills also operating closer to capacity. The result would be improved employment outcomes, ranging from about 1290 in 2000 to about 1000 in 2020. Key baseline modelled outcomes are set out in Figure F1.

Figure F1: Possible Baseline Impacts using Alternative Private Resource Assumptions

	Existing Baseline			Baseline under Alternative Assumptions		
Year	**2000**	**2010**	**2020**	**2000**	**2010**	**2020**
Crown Resource ('000 m^3)	115	82	78	115	82	78
Private Resource ('000 m^3)	194	93	45	208	100	100
TOTAL ('000 m^3)	**309**	**175**	**123**	**323**	**182**	**178**
Employment	1261	984	782	1289	1008	1001
Gross Value of Production ($m)	83	97	73	85	100	98

(ii) Scenario A

Under Scenario A, modelled total sawlog availability would reduce to 294,000m^3 in 2000, due to a reduction in Crown sawlog availability to 100,000m^3. By 2020, Crown sawlog availability could reduce to 69,000m^3, with overall resource availability possibly reducing to 114,000m^3. Using the alternative private resource assumptions,

total sawlog availability is modelled at 308,000m^3 at 2000, with the total modelled sawlog availability at 2020 being 169,000m^3.

Under Scenario A sawlog availability levels, one large and five smaller cluster processors could come online, although some could be operating below full capacity by 2020, with the major capacity reductions being likely to occur between 2014 and 2020. With the alternative private resource assumption, these plants are likely to operate at higher capacity, and a number of sawmills could also operate closer to their full capacity, compared to the discussion of Scenario A in Chapter 6 of this report. Under the alternative resource assumptions, employment is modelled at about 1250 by 2000 and at about 975 by 2020. Figure F2 sets out the comparative outcomes for Scenario A under current and revised scenario assumptions.

Figure F2: Scenario A under Current and Alternative Private Resource Assumptions

	Scenario A			Scenario A under Alternative Assumptions		
Year	**2000**	**2010**	**2020**	**2000**	**2010**	**2020**
Crown Resource ('000 m^3)	100	68	69	100	68	69
Private Resource ('000 m^3)	194	93	45	208	100	100
TOTAL ('000 m^3)	**309**	**175**	**123**	**308**	**168**	**169**
Employment	1225	945	741	1255	966	973
Gross Value of Production ($m)	80	91	69	82	94	94

(iii) Scenario E

As discussed in Chapter 6 of this report, Scenario E shows Crown sawlog availability reducing to about 24,000m^3, by 2020. Combined with current private resource assumptions, this results in total sawlog availability of 69,000m^3, compared with 325,000m^3 at 2000. Revising private sawlog assumptions increases total sawlog availability to 124,000m^3 at 2020.

As discussed in Chapter 6 of this report, Scenario E resource availability estimates provide scope for some limited industry development. However, with the alternative private resource assumptions making some additional cluster processing capacity possible, Scenario E's employment outcome at 2020 is modelled at around 785, compared with 490 under current assumptions. Scenario E's outcomes under the alternative private resource assumptions are shown in Figure F3.

Figure F3: Scenario E under Current and Alternative Private Resource Assumptions

	Scenario E			Scenario E under Alternative Assumptions		
Year	**2000**	**2010**	**2020**	**2000**	**2010**	**2020**
Crown Resource ('000 m^3)	132	44	24	132	44	24
Private Resource ('000 m^3)	194	93	45	208	100	100
TOTAL ('000 m^3)	**326**	**138**	**69**	**340**	**144**	**124**
Employment	1285	852	491	1319	878	785
Gross Value of Production ($m)	85	80	45	88	83	74