Western Australia’s Strategy for Plantations and Farm Forestry: 2008 – 2012 is intended to ensure the forestry industry is well placed to contribute to Western Australia’s environmental and economic sustainability into the future.

The Carpenter Government has successfully played a lead role in the development of plantation industries and this has delivered significant benefits in terms of:

- investment and greater diversity in rural economies;
- greater employment opportunities in rural WA;
- improved land use planning and natural resource management;
- managing salinity and waterlogging through lowering water tables;
- removal of carbon dioxide from the atmosphere;
- managing water and wind erosion;
- shelter for animals and stock;
- protection and enhancement of biodiversity;
- timber and wood fibre for construction; and
- biomass for energy.

Building on this success, the Government is now increasing activity in the State’s medium to lower rainfall areas, where tree planting may provide particularly important environmental and longer term regional development benefits.

Development of the strategy has identified a number of issues about which there is a range of views or which require further work. An example of the first is the role of the Forest Products Commission as lead agent, in respect to which the government has endorsed the relevant recommendation of the recent statutory review of the Forest Products Act (2000). An example of the second is the issues around trees and water use, which will be investigated and discussed further as part of the Government’s response to the National Water Initiative.

Over time the industry has developed strong partnerships with key stakeholders such as research institutions, local government, regional Natural Resource Management (NRM) groups, private investors, landholders and rural communities, working towards achieving environmental, social and economic outcomes. This strategy aims to maintain and further develop these partnerships to achieve a strong and competitive future for the industry in this State.

I would like to thank all those involved in developing this strategy, including the members of the Plantation Industry Ministerial Advisory Committee, and staff from the Department of Agriculture and Food, Trees South-West and the Forest Products Commission.

Kim Chance MLC
Minister for Agriculture and Food; Forestry; the Mid West and Wheatbelt; Great Southern
The Government has identified a number of critical success factors that need to be addressed to support its vision for a successful plantation and farm forestry industry in Western Australia. These are:

1. Identify a lead State agent to coordinate a whole-of-Government approach to plantations and farm forestry, and to implement the Strategy.
2. Develop mechanisms to encourage investment that will support integration of plantations and farm forestry with agriculture in the State’s medium and lower rainfall zones.
3. Facilitate industry development planning for future plantations and farm forestry, and value-adding processing industries.
4. Support research and development to optimise profitability of existing plantation investment, and develop new tree crops for medium and lower rainfall areas where commercial options are currently limited.
5. Establish a consistent framework for land use planning for plantations and farm forestry on cleared private land.

Accordingly, this Strategy outlines 10 key actions for Government as follows:

1. To appoint the Forest Products Commission (FPC) as lead agent to coordinate support for the plantations and farm forestry industry. As lead agent the FPC will provide leadership, policy guidance, and strategic direction to drive implementation of the strategy, and monitor, review and report on its progress.
2. Establish an appropriate mechanism to ensure the provision of industry advice to Government.
3. The FPC will work with the private sector, plantations and farm forestry industry and other Government agencies such as the Departments of Environment and Conservation, Agriculture and Food, Treasury and Finance, and Water, and regional NRM groups, as required, to establish a program to develop ‘forestry packages’, including:
   • approaches to funding the social and environmental benefits provided by trees in order to make new plantation projects profitable and attractive to private investors; and
   • landowner incentive schemes for farm forestry consistent with regional NRM strategies and investment plans, to contribute to commercial, environmental and social outcomes.
4. The FPC will facilitate, in conjunction with the industry, other relevant agencies and stakeholders, industry development planning, which includes:
   • identifying sustainable industries based on tree crops that can be grown in Western Australia’s environment;
   • matching this to availability of suitable land for identified commercial species capable of providing feedstock for processing industries; and
   • identifying infrastructure needs for new processing industries and facilitating their implementation.

As far as possible, these plans will contribute to achieving relevant State and regional NRM objectives.

In addition, this role will extend to facilitating planning for the management of threatening processes, including biosecurity issues.
5. The FPC will ensure future industry development plans identify appropriate ‘path to market’ strategies outlining:
   • current and future markets and end-uses for timber and timber products;
   • requirements for initial Government support and investment, with a view to exiting the industry once long term private sector investment is established; and
   • impact of new developments on viability of existing projects.

6. The FPC will monitor industry and industry development and report on its contributions to economic, social and environmental outcomes for Western Australia.

7. Consolidate Government plantations and farm forestry research, development and extension capacity in the FPC to provide the knowledge required to establish new industries in medium and lower rainfall agricultural areas.

Research, development and extension will focus on:
   • developing and encouraging adoption of tree farming systems that optimise the economic value of current and future plantation tree crops;
   • assessing and promoting new species, particularly for medium and lower rainfall areas, for products on which future industries could be based, such as carbon sequestration, woody biomass for production of energy and biofuels, biodiversity protection and other innovative goods and services;
   • developing and trialling tools to help predict the environmental services and economic value of specific tree planting works;
   • understanding the interaction between trees and water quality and quantity, so that tree crops can best deliver both environmental services and production benefits; and
   • capacity building to increase understanding by the community and adoption by rural land owners, to complement other NRM actions and programs.

The FPC will also work with stakeholders and providers to ensure industry education and training needs are met.

8. The FPC will work with the Western Australian Planning Commission and industry stakeholders to develop a planning process for plantations and farm forestry that is consistent, equitable and efficient for the industry and local communities.

9. The FPC will monitor and encourage industry compliance with relevant legislation and best practice, particularly as it is detailed in the Code of Practice for Timber Plantations in Western Australia (2006), or its successor.

10. The FPC will consult with industry and local government to explore the potential for meeting the needs of local government through use of the audit process under a recognised forestry certification scheme.

The strategy will be reviewed by 2012 to ensure it remains focused on the key issues and continues to provide the necessary support and direction for new investment and development of the industry.
INTRODUCTION

The plantation and farm forestry industry provides significant, multiple benefits to regional economies and communities. It has resulted in significant investment in land development and value-adding infrastructure, provided alternative, profitable land uses for farmers and provided jobs in rural areas. It has also established large areas of woody perennial vegetation with the potential to reduce land degradation and other environmental problems.

Some issues have persisted in relation to the Government’s involvement in the industry, which have been under review for some time. A long-standing need in institutional arrangements is clarity about lead agent responsibilities for providing policy advice, regulation and coordination for industry development. Fundamental to this is a statement about the Government’s primary role, and the way in which public funds are used to support plantation and farm forestry activities. The Government and industry need to work together to identify clear distinctions between issues of public and private benefit, and in turn primary responsibility for actions and outcomes. This Strategy details the role Government can play in facilitating development of this important industry.

THE DIRECTION

Government involvement in any industry is aimed at providing leadership in achieving environmental, social and economic benefits through careful planning, regulation, research and development, coordination, and monitoring and reporting. It may also have some commercial involvement in the early stages of industry development where public benefits are high and there is evidence of market failure. Ideally, there should also be strong likelihood of future private sector investment as an industry matures and demonstrates profitability.

This has historically been the basis for the Government’s commercial involvement in plantations and farm forestry, previously through the Forest Department, and Department of Conservation and Land Management (CALM, now Department of Environment and Conservation [DEC]), and since 2000 through the Forest Products Commission (FPC). These agencies primarily targeted the State’s higher rainfall areas where they correctly anticipated long term private sector investment in plantations and processing industries, and where opportunities existed for public benefits, including regional employment, revenue from increasing domestic and overseas demand, and environmental services such as salinity mitigation and water quality improvement. This has assisted in establishing mature, valuable plantation and processing industries for Western Australia’s higher rainfall areas, which now attract significant private sector investment.

The Government is now also directing resources toward those areas where perceived public benefits can be achieved, being primarily the State’s medium to lower (700 to 300mm) rainfall areas.

These areas are currently largely non-commercial for plantations and farm forestry, but may benefit from the environmental services and longer term regional development outcomes that tree planting and associated industries can provide. Because of this, a longer-term commitment may be required from government before the industry becomes self-sustaining.

CRITICAL SUCCESS FACTORS

In line with this new direction, the Government has identified critical success factors, which it believes need to be addressed for the industry to evolve and be successful. They are:

1. Identify a lead State agent to coordinate a whole-of-Government approach to plantations and farm forestry, and to implement the Strategy.
2. Develop mechanisms to encourage investment that will support integration of plantations and farm forestry with agriculture in the State’s medium and lower rainfall zones.
3. Facilitate industry development planning for future plantations and farm forestry, and value-adding processing industries.
4. Support research and development to optimise profitability of existing plantation investment, and develop new tree crops for medium and lower rainfall areas where commercial options are currently limited.
5. Establish a consistent framework for land use planning for plantations and farm forestry on cleared private land.
CONTRIBUTION TO STRATEGIC OUTCOMES

A number of State and Commonwealth Government policies and strategies highlight how plantations and farm forestry can make valuable contributions to the State’s environmental, social, and economic well being.

Tree Farming and Industry Development

The Strategy will support implementation of the Government’s Action Plan for Tree Farming and the FPC’s associated Tree Farming and Industry Development Plans. It encourages on-going industry development to identify commercial tree species and new industries that provide environmental, social and economic returns to Western Australia. It is also consistent with the Farm Forestry National Action Statement, and Plantations for Australia: The 2020 Vision.

The State’s Industry Policy Statement highlights the Government’s aim to develop a strong and diversified economy based on sustainable development principles. The Strategy will assist in meeting this aim by supporting sustainable, regional economic development, new industries development and new opportunities such as renewable energy.
Regional Development

The State Government’s Regional Development Policy Regional Western Australia – A Better Place to Live has as one of its aims to develop strong and diversified regional economies, which will also be augmented by the Government’s Buy Local Policy. These policies in particular recognise the importance of diversification of agricultural enterprises using commercial tree crops and supporting local businesses. The Strategy will assist in achieving these aims with a strong focus on encouraging plantations and farm forestry operations, which are integrated with agriculture, particularly in lower and medium rainfall areas.

Natural Resource Management

There are currently six regional NRM strategies for Western Australia, all of which recognise the important role trees can play in meeting particular targets to improve resource condition. This Strategy encourages close interaction between Government, the regional NRM groups and the Private Forestry Development Committees (PFDCs) to ensure plantations and farm forestry play an integral part in protecting high value natural resources. It will also provide outcomes consistent with the State’s Salinity Strategy.

Water

The Government recognises the importance of water quantity and quality as a critical resource management issue in determining decisions on land use allocation, social and economic development, and land management. The State Water Plan highlights the importance of close integration between water and land use planning decisions and that, where appropriate, water resource needs should provide a context for land use planning decisions. The Strategy will contribute to this by supporting research into the relationship between trees and water yield and their contribution to improving water quality, and a planning framework that considers water requirements of the community and environment.

Land Use Planning

The State Planning Strategy provides for coordination at State, regional and local levels to guide planning and sustainable development. This Strategy will assist in implementing the State Planning Strategy’s requirement that in appropriate areas, regional strategies, statutory plans and rural strategies should identify suitable land for farm forestry and that the benefits be promoted among the rural community.

Sustainability

The Western Australian State Sustainability Strategy recognises the environmental, social and economic services trees provide and proposes actions to achieve these multiple outcomes. The Strategy will contribute to the Sustainability Strategy by encouraging expansion of plantations and farm forestry into medium and lower rainfall areas to protect high value natural resources.

Greenhouse

Climate change caused by increasing greenhouse gas concentrations in the atmosphere is a major threat facing the planet. Western Australia’s Greenhouse Strategy and the recent Premier’s Climate Change Action Statement outline a number of actions to mitigate emissions and adapt to climate change. The Strategy will contribute to the objectives of encouraging plant-based carbon sinks, especially where the environment or other values will benefit. It will also contribute to the focus on adaptation by encouraging research into the role of tree plantings in offsetting carbon emissions and how future climate changes will affect the industry through changes in productivity, altered fire regimes and economic losses from extreme events.

Indigenous Engagement

Plantations and farm forestry may offer opportunities for Indigenous engagement and for the State to contribute to the aims of the National Indigenous Forestry Strategy.
DEFINITIONS

For the purposes of the Strategy, the term ‘plantations and farm forestry’ includes all aspects of growing and managing planted tree crops on public and private land, where the primary purpose is to create a resource for domestic processing and value adding industries, or for export. It also embraces the ecological services and benefits provided by plantations and farm forestry, which in time could become marketable commodities.

VISION

The Sustainability Strategy (2003, p. 132), refers to a vision for plantations and farm forestry:

“Production of sawlogs, pulpwood and other timber products from sustainably managed plantations is integrated with native forest use. Rural communities have adjusted to support the changed focus in use and management of native forests and the ongoing development of plantations throughout the South-West, including their role in restoring degraded landscapes creating new bio-industries and providing other environmental services such as carbon sequestration. Woodlands and sandalwood resources are also used and managed sustainably, with sandalwood production providing the basis for a new industry in the rangelands.”

In addition, the Forest Industry Statement (2004) notes that:

The Government’s vision for the timber industry of Western Australia encompasses:

- a high value native timber industry, providing high levels of employment and robust economic value to the South-West region;
- the efficient use of native timbers not suitable for high value uses;
- a profitable plantation industry producing a range of commodity products for local, interstate and overseas markets including construction timbers, panels, and fibre for pulp and paper products; and
- a growing tree farm estate in lower rainfall agricultural areas contributing environmental services (control of salinity, waterlogging, erosion and sequestration of carbon dioxide) as well as new and diversified industry in regional Western Australia.

This strategy aims to provide impetus to achieving the complementary intent of these statements.

INDUSTRY PROFILE

Growing Timber

The State’s timber industry was originally based on harvesting and processing wood from native sandalwood, wandoo, jarrah and karri woodlands and forests. However, the State also has a long association with plantations, particularly softwoods, with its first softwood trials being established in the early 1920s. In the 1950s, the Government realised native forests could not provide the whole range of timber products demanded by post-war economic development, and consequently during this time and up to the 1980s, areas of agricultural land and native vegetation were converted to softwood plantations.

Plants establishment on agricultural land continued after the 1980s and was driven by growing demand and community concern about forest conservation. Conversion of areas of native vegetation to plantation ceased in the mid-1980s, placing increased emphasis on plantation establishment on cleared farm land. The Government eventually ended logging in old growth forest vested with the Conservation Commission in 2001 and has created new conservation and national parks. These decisions have significantly reduced levels of commercial timber harvesting from native forests in recent times.

By the 1990s most of the plantation estate comprised long rotation softwoods and was Government owned. However, at this time, the Government through the (then) Department of Conservation and Land Management (CALM) initiated the development of hardwood plantations based on bluegums for woodchips. During the 1980s, CALM was involved in trials of blue gums as a tree crop that could attract private sector investment due to its short rotation period and provide environmental benefits in the State’s higher rainfall areas. A substantial blue gum industry has grown since this time, with approximately 260,000 hectares established. These are virtually all privately controlled, mainly by investment management firms or firms linked to international pulp and paper companies.

As well as helping to initiate large scale plantation industries for the State’s higher rainfall areas, the Government through the Forest Products Commission (FPC), DEC and the Department of Agriculture and Food (DAFWA) has also invested in research, development and extension on integrating woody perennials into farming systems. This occurred through farm forestry extension and training programs for higher and medium rainfall areas, in tandem with oil mallee and other tree plantation research and development for lower rainfall areas.

Since the 1990s CALM and the FPC has established approximately 17,000 hectares of maritime pine in medium rainfall agricultural areas. These trees have been established to replace plantations being progressively removed from the Gnangara Mound to maintain continuity of supply to major metropolitan processing facilities while fostering new industry in regional areas.
The Government has also encouraged oil mallee establishment in lower rainfall agricultural areas. During the 1990s, CALM and DAFWA undertook research and development in growing and harvesting oil mallees for oil production. The research demonstrated that oil mallees would not be profitable on the basis of oil production alone and their viability also required co-production of activated carbon and biomass for electricity generation. On the basis of potential returns from these products and the on-farm benefits that oil mallees provide, a substantial number of farmers throughout the State’s lower rainfall areas have integrated oil mallees with their existing farming operations. A pilot plant at Narrogin has demonstrated the capacity to produce oil and activated carbon, and generate electricity from harvested oil mallee foliage. The results of this operational pilot are being collated to attract private sector investment in regional processing facilities.

CALM and more recently the FPC have also conducted research since the 1980s on managing particular eucalypt species for sawlog production. This has demonstrated that in some situations eucalypts can have clear benefits on managing groundwater, and produce appearance grade timber for high value uses such as flooring, paneling and furniture.

CALM and the FPC have also been involved in demonstrating the potential for growing sandalwood, which is a particularly high value tree crop renowned for its aromatic qualities. Currently the majority of sandalwood comes from native stands in the rangelands. The FPC and some private growers have also conducted trials of Western Australian sandalwood in lower rainfall agricultural areas and Indian sandalwood in the Ord River Valley. This has resulted in private sector investment in sandalwood in the South-West and Kimberley.

Processing Timber

The Government’s existing softwood estate supports a fully integrated and mature industry, including a large pine sawmill at Dardanup and softwood processing facilities at Dardanup, Welshpool and Neerabup, which produce solid and reconstituted products for domestic and export markets. Reconstituted products include medium density fibreboard (MDF) and laminated veneer lumber (LVL), which significantly increase utilisation of the wood resource and complement solid wood products in meeting market needs.

The privately-owned hardwood estate produces pulp logs for wood chip exports through Bunbury and Albany for manufacture of high quality paper. These logs are processed by industrial chip mills and in-field chipping systems, and similar facilities will soon be needed at Esperance. Projects are also under way at Albany to use residue wood for engineered strand lumber (ESL) and bioenergy.

The industry is valued at approximately $600 million per annum, of which $250 million is derived from hardwoods and $350 million from softwoods. Growth in export sales of woodchips is likely to double within the next five years. It is estimated the industry directly employs 1450 people and another 3600 indirectly in regional areas. Investment in new plantations (excluding land), on-going maintenance, harvesting and log transport is approximately $85 million annually. Clearly, tree harvesting and wood processing industries make a valuable contribution to regional employment and socio-economic development.
Opportunities and Challenges

Demand for timber and timber products is growing as Australia’s population increases and markets emerge within the developing economies of India, China and other Asian countries. Australia’s trade deficit in forest products amounts to around $2 billion annually. Growing demand is coupled with a world-wide decline in timber production from native forests. Furthermore, development of new technologies has allowed the industry to partly offset losses of logs from native forests and meet an increasing number of market demands through reconstituted products such as particle board, MDF and LVL from smaller, lower quality plantation-grown softwood logs. An on-going challenge lies in developing new, high value uses for the substantial hardwood plantation resource. Similarly, there is growing interest and opportunities to use plantation residues for bioenergy.

Properly targeted tree planting at sufficient scale can play a role in addressing land and water degradation. For example, the substantial expansion of hardwood plantations on the South Coast has significantly reduced the rise of salinity in the Denmark River. This recognition is behind the Strategic Tree Farming Project (STF), a jointly funded project between the Western Australian and Commonwealth Governments to establish new plantations suited to lower and medium rainfall areas where environmental services are needed. Current options include maritime pine, eucalypt sawlogs and sandalwood. In time, other species might be added.

However, there are limited commercial returns and few or no mechanisms for identifying and paying for the environmental services provided by tree planting. In future it is possible improvements in water quality, biodiversity protection and carbon sequestration may attract payments through mechanisms such as carbon credits trading or through public-private partnerships.

In recognition of the multiple benefits plantations and farm forestry provide, the FPC has commenced research including identifying other potentially suitable species, defining site and climatic requirements, each region’s suitability, developing plans for future industries, and exploring new opportunities for existing industries. Future industry planning needs to have an increased focus on having raw materials from plantations processed locally into higher value products. This should provide for more sustainable regional development than that associated just with tree growing.

In addition to industry development, the Government needs to consider the industry’s needs within the context of broader land use planning decisions. It is recognised that a particular challenge for the industry has been the absence of a consistent process for assessing developments at the local government level. Hesitation to approve new developments reflects some local concerns about issues such as amenity, demands on infrastructure such as roads and impacts on water supply. The Government needs to work closely with the industry, and local planners to develop a process for resolving these issues.

Climate change presents both opportunities and challenges for plantations and farm forestry. Growing concern about climate change presents opportunities in the form of carbon sequestration credits generated by tree planting. DEC and the FPC have undertaken considerable research on rates of carbon sequestration under different forestry systems to underpin future carbon trading mechanisms and the Government has enacted legislation to separate the ownership of carbon from both trees and land.

The State Government’s Greenhouse and Energy Taskforce has provided advice about ground rules for using greenhouse emission offsets including carbon sequestration to reduce net emissions from the energy sector. Importantly, the Commonwealth Government has now ratified the Kyoto Protocol and announced its commitment to introducing a national emissions trading scheme in 2010. This should provide significant new opportunities for tree-based greenhouse offsets in Western Australia.
Climate change is also increasing interest in renewable energy, presenting opportunities for tree crops to be grown for biomass energy production. Integration of electricity generation from biomass combustion with log processing facilities is already practiced in the forest products processing industry. For example, co-location of a pallet plant and power station, at Collie and the planned construction of bioenergy and green energy pelletising plants close to mills at Albany.

Opportunities are also emerging in various parts of the State to grow perennial plants to produce biofuels. The Government is involved in trialling species that show potential, and which have attracted the interest of mining companies interested in powering parts of their operations using biodiesel. There is also considerable interest from managed investment schemes and private equity companies looking to expand their operations in the north of the State where the climate suits fast growing species and ample water resources exist. This also provides opportunities for Aboriginal employment in forestry and options for diversification on Aboriginal-owned land. Similar opportunities exist in the South-West.

Climate change will also have adverse impacts. Reduced rainfall and increased temperatures in the southern half of Western Australia may reduce productivity, increase pest and disease threats, increase fire risks and increase the frequency of extreme events such as droughts and storms. These impacts will have to be taken into account when planning new plantation and farm forestry investments. In addition to reducing productivity, reductions in rainfall may increase competition for water resources between plantations and farm forestry and other land uses. Conflicts of this nature are already emerging in some parts of South-West Western Australia’s higher rainfall zone, particularly where irrigated horticulture and viticulture is concentrated.

Trees have positive impacts on water quality when enough of the right species are planted in the right places, particularly in agricultural areas experiencing the impacts of rising groundwater and salinity. However, in higher rainfall zones, large scale plantings occupying large proportions of individual catchments can impact negatively on streamflow and groundwater recharge, and consequently reduce water supply. Western Australia has signed the National Water Initiative (NWI), which requires it to assess the significance of activities that intercept water on catchments and aquifers, and specifically refers to the impact of large scale plantation establishment. State agencies, local governments and PFDCs have begun working together on this issue to develop a coordinated approach in the higher rainfall part of the south-west corner. The Department of Water and the FPC will need to work with industry stakeholders and local governments to identify key research issues in relation to plantations and water management, particularly to support future land use and water resource planning decisions. The FPC will collaborate with the Department of Water to ensure proper accounting of the impacts of plantations and farm forestry on water balance and water resource management, and will provide technical input in the preparation of statutory water plans. The Department of Water will also need to work with key stakeholders in determining appropriate allocations of water to plantations and farm forestry operations, in the context of other community, industry and environmental water needs.
1. LEAD AGENT

**ACTION 1**
The Government will appoint the Forest Products Commission (FPC) as lead agent to coordinate support for the plantations and farm forestry industry. As lead agent the FPC will provide leadership, policy guidance, and strategic direction to drive implementation of the Strategy, and monitor, review and report on its progress.

The Government has reviewed its involvement in the plantations and farm forestry industry through a Statutory Review of the Forest Products Act, 2000. The Review has determined that the Government’s lead agent for the forest products industry, including plantations and farm forestry, should be the FPC.

**FACILITATING FOREST INDUSTRY DEVELOPMENT**

There are instances where direct Government investment in industry development is justified. In relation to plantations and farm forestry, public investment should focus on overcoming impediments or disincentives to private sector investment where longer term private sector investment is highly likely and where public benefits can be demonstrated. In light of this, Government investment in plantations and farm forestry should be aimed primarily at encouraging establishment in medium and lower rainfall areas on the basis of purchasing environmental services and providing longer term regional development outcomes.

**Whole-of-Government Approach**

A number of State agencies have considerable expertise relevant to plantations and farm forestry, and measures to bring about an enhanced whole-of-Government approach are outlined in Section 4 of the Strategy. In addition, the FPC will help co-ordinate other efforts across government to:

- develop commercial mechanisms to encourage joint public-private sector investment in medium and lower rainfall plantations and farm forestry;
- facilitate industry development;
- conduct research and development to support establishment of new industries; and
- implement relevant legislation and policies to ensure plantations and farm forestry developments are consistent with community needs.

Fundamental to the above activities will be developing partnerships with relevant stakeholders. The lead agent will work with national, State and local governments, industry bodies, the private sector, rural planning and natural resource managers, research organisations, and other stakeholders in plantations and farm forestry. These partnerships are essential to ensure monitoring and improvement of policies and programmes in areas such as biosecurity, NRM and technology development.

**ACTION 2**
The Minister will establish an appropriate mechanism to ensure the provision of industry advice to Government.

In particular, the FPC in collaboration with other agencies will support strong linkages at the local level between regional NRM groups, local governments, PFDCs, farm forestry extension staff, growers and industry. Regional NRM groups are developing resource condition and management action targets to direct funding at strategic projects where trees can play a role. The groups have strong synergy with the PFDCs, which have been effective in bringing stakeholders together to broker partnerships, and to encourage greater industry and government involvement at all levels. The Government also recognises the important relationship PFDCs and regional NRM groups have in providing assistance to local land managers, setting up demonstrations, providing information, and supporting training and educational programs.

The FPC will continue to work closely with the regional NRM groups and PFDCs to identify new commercial species and develop plantation and farm forestry systems that can attract private sector investment. As part of this, the FPC will continue to provide advice on the role that plantations and farm forestry can play in the provision of environmental services, including carbon sequestration and salinity mitigation.

Biosecurity management is also an important issue for the plantations and farm forestry industry. The recent European house borer outbreak is a timely reminder of this. As lead agent, FPC will provide leadership to forestry industry for biosecurity. It will need to work with industry groups to assist them develop industry biosecurity plans, which identify the key biosecurity threats and document policy, funding and management arrangements to address those risks. A legislative framework and technical and research capacity to facilitate management of biosecurity is required. Alternatively partnership arrangements with DAFWA could be developed to provide these services.

The FPC will also work with the Western Australian Planning Commission (WAPC), the industry and local governments to ensure plantation and farm forestry developments are consistent with regional and local community planning needs. The Government has an important role to play in developing an appropriate land use planning process for plantations and farm forestry and encouraging widespread adoption of best practice. The Government also has a role to play in encouraging and monitoring industry commitment to best practice, which will help increase public and investor confidence in the industry.

The Government is keen to continue receiving advice from industry. To that end, the Plantation and Farm Forestry Ministerial Advisory Committee, an advisory body comprising members that are well-informed about the interests of stakeholder groups, has been formed to facilitate monitoring and resolution of cross-sectoral issues.
2. MECHANISMS TO ENCOURAGE INVESTMENT

ACTION 3
The Forest Products Commission will work with the private sector, plantations and farm forestry industry and other Government agencies such as the Departments of Environment and Conservation, Agriculture and Food, Treasury and Finance, and Water, and regional NRM groups, as required, to establish a program to develop ‘forestry packages’, including:

- approaches to funding the social and environmental benefits provided by trees in order to make new plantation projects profitable and attractive to private investors; and
- landowner incentive schemes for farm forestry consistent with regional NRM strategies and investment plans, to contribute to commercial, environmental and social outcomes.

BASIS FOR INVESTMENT

Government investment is made on the basis that private sector investment can also be attracted as markets develop and confidence grows in the commercial values of the commodities produced. This combination of public and private sector investment will in turn encourage planting sufficient trees to maximise environmental outcomes and to develop resources for new processing and value adding facilities. Commercial value from medium and lower rainfall plantations and farm forestry may eventually exist in the combined assemblage of commodities such as marketable logs, biomass for renewable energy production, carbon sequestration and possibly others such as salinity and biodiversity credits.

However, there are currently disincentives to private sector investment in medium and lower rainfall areas, in particular that markets for commodities from trees suited to these areas are either too distant or yet to be established. Net returns, cash flow patterns and time to return are also different to those typical of traditional land uses (namely agriculture); and hence few tree crops can currently compete on a broad scale when assessed in strict financial terms. Currently there is also insufficient local demand for tree products to warrant planting trees at a scale that would provide significant and lasting environmental benefits.

There are however emerging opportunities from overseas demand, particularly with the dwindling capacity of tropical rain forests around the world, and growth in Asia’s demand for wood products. The challenge is to bring markets and investors together in such a way that the current impediments to tree planting investment in the State’s medium and lower rainfall areas can be overcome. Markets for environmental services will be a significant contributor to meeting this challenge.

To address this, the Government will establish a program to encourage public and private investment in tree planting and indeed NRM activities more generally. This will involve:

1. developing tools to quantify the value of the environmental services provided by trees, and where in the landscape they will be of greatest value to the community;
2. undertaking economic analysis to quantify the commercial gap between current farming systems and plantations and farm forestry options in medium and lower rainfall areas; and
3. working with the private sector including industry associations, to develop commercial mechanisms that will facilitate public and private investment in plantations and farm forestry, particularly for those areas identified as State and regional NRM priorities through State instruments and regional NRM investment plans.

MARKET BASED INSTRUMENTS AND INVESTMENT PLANNING TOOLS

The Government has begun developing commercial mechanisms through its STF program, which is a joint program between the Commonwealth and State Governments through the NAP. The Government will also work with the industry and relevant stakeholders to determine circumstances under which they can also jointly invest in tree farming in medium and lower rainfall areas. Some commercially-based mechanisms exist such as public-private partnerships, and tendering and auction schemes. Such schemes require innovative design, underpinned by good science and tools that allow rigorous quantification of the environmental services provided.

For example, the NAP has funded a national pilot program to assess a range of market based instruments. Perhaps the most advanced of these is EcoTender, a pilot auction for multiple environmental outcomes. This involves landholders essentially competing for public funds to deliver environmental works that will protect an identified high value public asset. In the case of plantations and farm forestry, this might involve bidding for public funds to plant a specified area to trees to protect a local nature reserve from salinity.

Assessing bids of this nature requires analytical tools that can quantify the impact trees have on catchment scale environmental outcomes. Both the Victorian Department of Sustainability and Environment and Ensis have developed catchment modelling frameworks to integrate ecosystem datasets and tools, and facilitate estimation of multiple environmental outcomes, including carbon sequestration, and improvements to terrestrial biodiversity, aquatic function and saline land area. These frameworks are being evaluated in Toolibin and Tone River catchments respectively, because such an approach is needed to support investment decisions being made in regional NRM investment planning. This will require a significant investment in improving our soil mapping and our understanding of the way in which different parts of the landscape respond to tree planting.
3. INDUSTRY DEVELOPMENT

**ACTION 4**
The Forest Products Commission will facilitate, in conjunction with the industry, other relevant agencies and stakeholders, industry development planning, which includes:

- identifying sustainable industries based on tree crops that can be grown in Western Australia’s environment;
- matching this to availability of suitable land for identified commercial species capable of providing feedstock for processing industries; and
- identifying infrastructure needs for new processing industries and facilitating their implementation.

As far as possible, these plans will contribute to achieving relevant State and regional NRM objectives.

In addition, this role will extend to facilitating planning for the management of threatening processes, including biosecurity issues.

**ACTION 5**
The Forest Products Commission will ensure future industry development plans identify appropriate ‘path to market’ strategies outlining:

- current and future markets and end-uses for timber and timber products; and
- requirements for initial Government support and investment, with a view to exiting the industry once long term private sector investment is established; and
- impact of new developments on viability of existing projects.

**ACTION 6**
The Forest Products Commission will monitor industry and industry development and report on its contributions to economic, social and environmental outcomes for Western Australia.

**INITIAL DEVELOPMENT**

A number of Government agencies have amassed significant knowledge over a long period of time about tree species suited to Western Australian conditions. Agencies such as DEC, FPC and DAFWA have refined tree breeding and silvicultural techniques, determined the biophysical conditions that best suit particular tree species, and had long standing involvement with industry partners and research organisations to determine appropriate end uses for timber products. This knowledge and understanding means the Government is well placed to initiate and facilitate industry development planning.

In 2002 the Government released its *Action Plan for Tree Farming*, outlining a framework for achieving economic, social and environmental outcomes by planting commercial tree crops. To implement the Action Plan, the FPC has prepared industry development plans (IDPs) for:

- maritime pine at Esperance and in the Midwest;
- eucalypt sawlogs in central South-West recovery catchments; and
- radiata pine in the South-West.

In consultation with grower groups and in consultation with key stakeholders including PFDCs, the FPC is currently exploring preparation of an IDP for sandalwood and another for oil mallees. The need to review existing IDPs or develop others will be determined through ongoing dialogue with industry.

IDPs outline opportunities for existing plantation resources, and assess the potential for future plantations and farm forestry operations and associated processing and value-adding industries. They cover (or will cover) such things as:

- infrastructure needs to support establishment, management and harvest, including transport needs, and requirements for power and water;
- future market needs for processing and timber products;
- employment requirements to sustain future industries;
- species suitability to Western Australia’s biophysical conditions and constraints; and
- landscapes where trees can assist in protecting high value natural resource assets, particularly those identified in State, and regional NRM strategies and investment plans.

Consultation with a range of Government, industry and community stakeholders will be an important part of the IDP process. IDPs will provide a basis for developing new industries; however, further work is needed in defining or developing market demand for timber and timber products, and other commodities produced from trees in lower and medium rainfall agricultural areas. The major value-adding from tree planting occurs during processing, and to a lesser extent, harvesting, which provide wider benefits to the economy and our balance of trade. The Government needs to work closely with private sector and business interests to identify future processing and value adding opportunities, particularly for medium and lower rainfall areas.
LONG TERM INVOLVEMENT

While there is clearly a role for public investment in the foundation stages of developing new industries, ideally this should only be done as a precursor to longer term private sector investment based on demonstrated commercial feasibility. Once an industry matures and there is sufficient private sector investment to sustain it, the Government can reduce and eventually cease its direct commercial investment. However, it needs to be recognised there may be circumstances where long term Government involvement is needed to establish new industries, particularly where commercial drivers and market mechanisms are presently absent, and there are significant ‘collateral’ public good benefits.

Industry development plans need to define appropriate ‘path to market’ strategies, clearly outlining initial requirements for Government investment with a view to reducing involvement once sufficient private sector investment has been encouraged. This will give private investors a high level of confidence that future markets exist, and that these will not be constrained by long term Government involvement. Based on its experience and involvement in the existing industry, Government will continue to make judgements about the extent of its involvement and strike a balance between monitoring existing industry investment in developing resources to provide impetus for new industries. There is a need for processors to have certainty over supply to invest in costly new facilities, and therefore, FPC will have a role in monitoring the supply chain for new and existing industries, and in encouraging investment in increasing the resource base.

In future, the Government will generally act to facilitate and support rather than actively participate in the industry, except where it is demonstrated to be essential for attracting significant investment in large scale downstream processing and value adding industries, or necessary to deliver important public good outcomes. Where Government is an active participant, care will be taken that arrangements reflect present and anticipated future market needs and that potential market distortion is considered, and minimised.

RESOURCE MONITORING

Monitoring of industry contributions to environmental, social, and economic outcomes is integral to shaping Government’s future policy and investment in industry development. Mapping of plantation and farm forestry location, age, species and growth are basic to such monitoring. This should also include relating the regional distribution of plantations and farm forestry to the location of priority NRM assets.

The FPC will coordinate industry monitoring based on currently available datasets such as those collated by DEC for the Bureau of Rural Sciences’ National Plantation Inventory.
**ACTION 7**

The Government will consolidate its plantations and farm forestry research, development and extension capacity in the Forest Products Commission (FPC) to provide the knowledge required to establish new industries in medium and lower rainfall agricultural areas.

Research, development and extension will focus on:

- developing and encouraging adoption of tree farming systems that optimise the economic value of current and future plantation tree crops;
- assessing and promoting new species, particularly for medium and lower rainfall areas, for products on which future industries could be based, such as carbon sequestration, woody biomass for production of energy and biofuels, biodiversity protection and other innovative goods and services;
- developing and trialling tools to help predict the environmental services and economic value of specific tree planting works;
- understanding the interaction between trees and water quality and quantity, so that tree crops can best deliver both environmental services and production benefits; and
- capacity building to increase understanding by the community and adoption by rural land owners, to complement other NRM actions and programs.

The FPC will also work with stakeholders and providers to ensure industry education and training needs are met.

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**RESEARCH DIRECTION**

The bulk of the Government’s research, development and extension effort for plantations and farm forestry should be in encouraging industry expansion into medium and lower rainfall areas. This is particularly important where public funds are used to purchase ‘non-market’, public benefit (eg environmental) outcomes. It is also recognised that effective implementation of such research, and indeed its outcomes, requires participation by land managers. Consequently there needs to be an extension effort to facilitate two-way flow of knowledge and information, which is often otherwise the subject of market failure.

To maximise returns to the State, the major focus for tree planting in these areas should be on protecting high value natural resources such as water, and biodiversity assets such as wetlands and remnant vegetation. Government agencies and regional NRM groups have begun identifying and prioritising high value natural resources to underpin joint State and Commonwealth Government funding. Public funding in tree planting to protect these assets must be based on the best available science, and informed by ongoing monitoring and evaluation to provide assurance that the design and scale of plantings will provide benefits.

One of the benefits of establishing more trees in the landscape lies in their capacity to restore the hydrologic balance, lowering watertables and reducing salinity, and plantings must be targeted to achieve these benefits. Where trees are planted for this purpose, Government agencies, landholders, natural resource managers and research organisations will work together to provide advice on landscape suitability, predicted hydrologic impacts and consequential costs and benefits. Government agencies have already begun developing tools and guidelines for successful salinity management utilising farm forestry and revegetation. They also have experience in establishing monitoring systems to determine the effectiveness of salinity management.

There are a number of State agencies and organisations throughout Australia investigating new timber technologies, tree crops for future industries, market based instruments to purchase environmental services, and methods for monitoring the impact of trees in the landscape and for improving plantation efficiency. The FPC will seek partnerships with research institutions, universities, cooperative research centres, research and development corporations, and other organisations to apply the results of this research to Western Australia. The State’s PFDCs can play an important role in working across Government, and with regional NRM groups, local government and other stakeholders to help identify research needs, broker partnerships and disseminate information.

The FPC will also take an active role in coordinating other research across Government, setting research priorities and undertaking planning, and brokering partnerships. The Government recognises that there are several State agencies with research and technical expertise in plantations and farm forestry, and it will investigate options to coordinate these efforts to improve efficiency.

The Government’s key foci for research should be on:

- quantifying the environmental services provided by trees;
- identifying species, timber and other products, forestry systems and commercial mechanisms for medium and lower rainfall areas; and
- monitoring and evaluation to improve understanding about the interactions between plantations and farm forestry and management of natural resources. This will be important to support programs aimed at purchasing environmental services and in determining the impact of trees in planning decisions, such as those related to water resource planning.
4. RESEARCH, DEVELOPMENT AND EXTENSION

KEY RESEARCH AREAS

Environmental Services
As well as developing commercial mechanisms that place an economic value on environmental services, research is needed to better quantify the environmental services provided by trees, and to develop tools for determining the areas in the landscape where trees can most effectively provide these services. This will support public investment in plantations and farm forestry to protect high value natural resources. Spatial datasets and modelling tools are available to support farm scale planning for salinity management, allowing better placement of trees and prediction of their benefits.

Forestry and Forest Products
The FPC will work with Government agencies, industry partners and research organisations to develop and refine silvicultural and harvesting systems to improve profitability and sustainability, improve seed technology for commercial purposes, tree breeding to suit a range of biophysical conditions, and wood technology to facilitate development of new timber products. This research is particularly important to support industry development for trees suited to lower and medium rainfall agricultural areas.

A number of emerging opportunities could create demand for new commodities, such as carbon sequestration, bioenergy and activated carbon which could increase the profitability of plantations and farm forestry in medium and lower rainfall areas. In relation to carbon sequestration, further research is needed to determine sequestration rates of different species and forestry systems to underpin a future carbon trading scheme. With regard to biomass production, research is needed to increase tree water use and growth rates of woody perennials and reduce harvesting costs. Translating growth knowledge from such research into robust carbon accounting methods and systems is also a priority.

Water Resources
Trees can slow or reverse groundwater rise and the spread of salinity and waterlogging with a resultant improvement in water quality. Through mechanisms including interception, they can potentially also have impacts on streamflow and groundwater, and consequently water yield, which is an issue the State must consider in its State and regional statutory water plans and under its commitments to the National Water Initiative.

It is important to develop tools to predict the positive and negative impacts of plantation establishment on water yield and quality. As well as providing solid information for planning decisions in areas of competing land uses, such predictions could form the basis for financial incentives to reward in salinity and water quality improvements. Developing these tools will depend on gaining a comprehensive understanding of the hydrologic function of plantations and farm forestry in Western Australian landscapes. This will pave the way for smart design of plantations and farm forestry systems to achieve water quality improvements and to optimise catchment run-off to yield high volumes of fresh water.

Water resource management and land use planning processes need to deal with land uses that reduce streamflow, particularly with diminished rainfall observed in South-West Western Australia in recent decades. In parallel with research to quantify the relationships between trees and streamflow in local catchments, there is a need for water resource managers to determine sustainable maximum diversion limits and to include forest growers in water resource management planning processes. A consideration in assessing sustainable diversion allowances and limits is an understanding of historic (pre-clearing) water flows.

Adaptation to Climate Change
Issues related to competing demands for water face all of Western Australia’s industries, particularly in the face of climate change which has seen South-West Western Australia experience a 10 to 15 per cent reduction in rainfall since the 1970s resulting in 50 per cent less streamflow. Future projections for the region indicate a continuation of this drying trend. Furthermore, the State has experienced a 0.8 degree increase in temperature during the last century and future predictions are for continuing increases in temperature.

These features of climate change are very likely to have impacts on the productivity of plantations and farm forestry in Western Australia, through risks associated with lower water availability, higher evaporation, altered fire regimes, increased incidence of pests and diseases, possibly increased frost events and other extreme weather events. However, there is considerable imprecision in predicting the likelihood of these impacts and further work is required to better understand them and to develop strategies to adapt to them.

In order for tree planting to maintain profitability and continue providing a host of environmental benefits, the likely impacts of climate change on tree planting need to be determined. There will be a need to consider how increasing temperature and evaporation, and declining rainfall will impact on tree growth rates, and therefore the areal extent of where plantations will be profitable. With regard to declining rainfall, an additional important issue will be addressing competition with other land uses for increasingly scarce water resources in water resource catchments, as required by the National Water Initiative.
PLANNING POLICY

Plantations and farm forestry represent different land uses to traditional agricultural land uses such as horticulture and grazing, and at appropriate locations can provide a more sustainable and profitable alternative to certain land uses. Likewise at other locations large scale plantations can be in conflict with existing land uses and community aspirations.

A recognised, on-going issue for the plantations and farm forestry industry has been the absence of a clear planning framework. This Strategy highlights the dual need for:

1. a consistent approach to local government approvals processes that provides equity with other rural land uses; and
2. plantation growers and farm foresters to meet expectations in relation to land stewardship and community responsibility.

Planning processes at the local level should support orderly development of the plantation and farm forestry industry and investment certainty, and at the same time help ensure compliance with best practice and relevant legislation to protect wider community interests. Legislation governing establishment, on-going management, and harvest and transport of plantations and farm forestry is detailed in the Code of Practice for Timber Plantations in Western Australia (2006) developed by Australian Forest Growers, the FPC and the Forest Industries Federation of Western Australia.

The Western Australian Planning Commission (WAPC) has suggested planning decisions for plantations and farm forestry should be determined on the basis of compliance with a code of practice, and consistency with the agreed planning objectives for a particular land use zone and/or planning unit. The Government supports such an approach and the FPC will work with the WAPC, local government, other agencies and the industry to develop an agreed process.

Importantly, this process should take into account the likely issues associated with proposed developments, including infrastructure and fire management.

The FPC will work with the Department for Planning and Infrastructure to consider the best practical management of the transport task and the implications of new projects on existing operations and the community.

COMPLIANCE WITH BEST PRACTICE

The Government supports industry self regulation and notes that the current Code provides for dealing with breaches. However, Government believes the FPC should also have some role in working with the industry to monitor and encourage compliance with best practice and assist in dealing with any breaches of relevant legislation. In this way the FPC will support self regulation by encouraging the development and use of tools for self assessment and reporting on compliance with best practice as identified by a code of practice. It will also assist by facilitating liaison between the industry and relevant agencies on particular regulatory matters. The FPC should also have a role in working with the industry and local government to review and amend the Code as required, including ensuring reference to new legislation and relevant planning policies.

Industry increasingly uses certification as a tool to assure stakeholders (especially customers) that wood products have been produced in a sustainable manner. The FPC will continue to work closely with the industry on certification. Most major Australian plantation companies and State forest agencies have management of their plantations and native forests certified as satisfying either the Australian Forestry Standard (AFS) or Forest Stewardship Council (FSC) principles. Where organisations have also obtained Chain of Custody certification, they can label their wood products, providing independent assurance to consumers that their wood is produced from forests and plantations managed in a socially, environmentally and economically sustainable manner.

Universal adoption of recognised forest certification would enable the process to become a major vehicle for industry self regulation and it may be possible in the future to meet planning approval and on-going monitoring needs using the audit process under the AFS or FSC scheme. The FPC will consult with industry and local government to explore this opportunity.
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