Department of Sustainability and Environment

*Victoria's State of the Forests Report 2008*

# Criterion 7:

## Legal, institutional and economic framework for forest conservation and sustainable management

A Victorian Government initiative

Victoria
The Place To Be

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# Introduction

The legal, institutional and economic frameworks for forest conservation are key components of sustainable forest management in Victoria. These frameworks should ensure that decisions on forest management involve the community and industry, and effectively integrate short and long term economic, environmental and social considerations. Improving the capacity to enforce laws, regulations and guidelines that support sustainable forest management is also essential.

Continual improvement in sustainable forest management requires consistent monitoring and reporting on the condition of forests, as well as high quality research and development. Improved knowledge will enable informed assessments on the effectiveness of forest management and ensure credible analysis and expert advice is used in decision-making and policy development for Victoria's forests.

Three indicators are used to assess the legal, institutional and economic frameworks for forest conservation and sustainable management. Two indicators are used to assess the capacity to obtain the knowledge and information required to improve forest management.

- Indicator 7.1 Extent to which the legal framework (laws, regulations, guidelines) supports the conservation and sustainable management of forests
- Indicator 7.2 Extent to which the institutional framework supports the conservation and sustainable management of forests
- Indicator 7.3 Extent to which the economic framework supports the conservation and sustainable management of forests
- Indicator 7.4 Capacity to measure and monitor changes in the conservation and sustainable management of forests
- Indicator 7.5 Capacity to conduct and apply research and development aimed at improving forest management, including development of scientific understanding of forest ecosystem characteristics and functions

# Indicator 7.1 Extent to which the legal framework (laws, regulations, guidelines) supports the conservation and sustainable management of forests

## Key Message

Victoria has a comprehensive legal framework providing governance for a range of forest management issues including the conservation of forests and associated values such as biodiversity and soil/water quality, regulation of forest clearing, planning and review, public participation, Indigenous values and participation, the application of best practice, protection of cultural heritage, and sustainable timber harvesting in State forest.

Whilst the legal framework is generally comprehensive for forest on public land, it does not apply to forest on private land for many aspects of sustainable forest management.

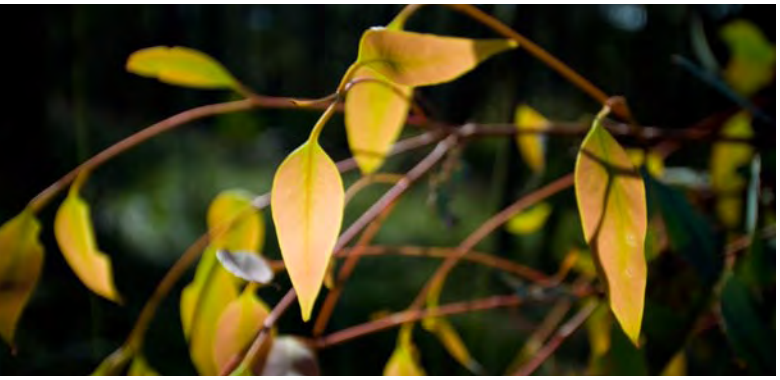
Victoria's legal framework for the sustainable management of forests was strengthened during the reporting period with the addition of new legislation including the *Sustainable Forests (Timber) Act 2004* and *Sustainability Charter for Victoria's State Forests*.

## Rationale

This indicator reports on the extent to which the legal framework supports the conservation and sustainable management of forests. A legal system that ensures transparency and public participation in policy and decision-making processes supports continuous improvements in sustainable forest management.

## Background

A legal framework (laws, regulations and guidelines) is essential for the sustainable management of forests. Victoria's legal framework for forest management includes legislation and regulations to clarify property rights, codes of practice, international, national, state and regional agreements, periodic planning and review, and public participation. The legal framework is administered by State and local governments, statutory authorities and regional management authorities.



## Status and trends

The main legislation relevant to sustainable forest management in Victoria is shown in Table 1. The extent to which the legal framework supports the conservation and sustainable management of forests is shown in Table 2. Main findings include:

- Victoria has a comprehensive legal framework for the conservation and sustainable management of forests. The framework provides governance for a range of forest management issues including the protection and conservation of forests, the protection of flora and fauna species, planning and review, public participation, protection of cultural heritage, regulation of forest clearing, and sustainable timber harvesting in State forest;
- The cultural, social and environmental values associated with Indigenous Australians are also reflected in Victoria's legislation, including Indigenous participation in forest planning and policy;
- The legal framework is generally comprehensive for State forest and nature conservation reserves. However, the legal framework does not apply to forest on private land for many aspects of sustainable forest management; and
- Victoria's legal framework for the conservation and sustainable management of forests was strengthened during the reporting period with the addition of new legislation including:
  - *Sustainable Forests (Timber) Act 2004,* a major reform to provide a framework for sustainable forest management and sustainable timber harvesting in State forest. The Act formally introduced the principles of ecologically sustainable development into Victoria's forest management. The Act also set out reporting requirements, resulting in the development of Victoria's criteria and indicators for sustainable forest management (Department of Sustainability and Environment, 2007), and a commitment to five-yearly State of the Forests Reporting.
  - *Sustainability Charter for Victoria's State Forests* (Department of Sustainability and Environment, 2006) , created under Section 11 of the *Sustainable Forests (Timber) Act 2004*. The Sustainability Charter sets out objectives, consistent with the principles of ecologically sustainable development, for the sustainability of forests and the sustainability of the timber harvesting industry.
  - *Safety on Public Land Act 2004*, provides for public safety in State forest through the establishment and enforcement of public safety zones.

## Indicator 7.1 Extent to which the legal framework (laws, regulations, guidelines) supports the conservation and sustainable management of forests

### Table 1: Main legislation relevant to sustainable forest management in Victoria

Source: Department of Sustainability and Environment

| Main legislation | Purpose | Tenure |
|---|---|---|
| *Forests Act 1958* | Consolidates the management and protection of State forest, including timber harvesting and fire management. | State forest |
| *Sustainable Forests (Timber) Act 2004* | Provides a framework for sustainable forest management and sustainable timber harvesting in State forest, including the provision of a Sustainability Charter and the regular reporting against agreed criteria and indicators. | State forest |
| *Conservation, Forests and Lands Act 1987* | Provides a framework for a land management system including necessary administrative, financial and enforcement provisions. | Public land |
| *Flora and Fauna Guarantee Act 1988* | Establishes a legal and administrative structure for the conservation of Victoria's native flora and fauna, including the management or control of flora and fauna, and the management of potentially threatening processes. | All tenures |
| *Victorian Plantations Corporation Act 2003* | Established the Victorian Plantations Corporation to manage state plantations and to require that timber harvesting comply with a code of practice. | Public land |
| *National Parks Act 1975* | Provides a framework for the establishment and management of national parks and other conservation reserves. | Nature conservation reserves |
| *Catchment and Land Protection Act 1994* | Provides a framework for the integrated management and protection of catchments. | All tenures |
| *Parks Victoria Act 1998* | The establishment of Parks Victoria to manage national parks and other reserves. | Nature conservation reserves |
| *Environment Protection Act 1970* | Provides a framework for preventing pollution and environmental damage by setting environmental quality objectives and establishing programs to meet them. | All tenures |
| *Forestry Rights Act 1996* | Provides legal security to the 'Forest Property Owner', recognises carbon sequestration rights. | All tenures |
| *Road Management Act 2004* | Establishes a framework for the management of the road network and establishes the general principles which apply to road management. | Public land |
| *Safety on Public Land Act 2004* | Provides for public safety in State forest by providing for the establishment and enforcement of public safety zones. | Public land |
| *Aboriginal Heritage Act 2006* | Protects cultural heritage sites that are of significance to Indigenous Australians. | All tenures |

# Indicator 7.1 Extent to which the legal framework (laws, regulations, guidelines) supports the conservation and sustainable management of forests

**Table 2: Extent to which the legal framework supports the conservation and sustainable management of forests by tenure category, 2005-06**
Source: Department of Sustainability and Environment

| Extent to which the legal framework provides for | Rating[A] | | |
|---|---|---|---|
| | State forest | Nature conservation reserves | Private forest |
| Forest management planning and review | | | |
| Forest management/policy planning and review | Yes | Yes | Yes |
| Property rights | Partly | Partly | Yes |
| Periodic assessment of forest related resources | Partly | Partly | No |
| Public participation | | | |
| Public consultation for forest related policy | Partly | Partly | Yes |
| Public consultation to develop forest related management plans | Partly | Partly | No |
| Publication of specific forest-related information | Yes | Yes | No |
| Indigenous participation | | | |
| Formal Indigenous participation in management and planning | Partly | Partly | No |
| Recognition of cultural values | Yes | Yes | No |
| Recognition of Native Title Rights, customary and traditional rights, forest access, and protection of Indigenous intellectual property | Yes | Yes | No |
| Conservation | | | |
| Recognition of scientific values | Yes | Yes | No |
| Recognition of voluntary reserves on private land | Yes | Yes | No |
| Regulation of forest clearing | Yes | Yes | Yes |
| Sustainable Forest Management an explicit objective | Yes | Yes | Yes |

[A] Yes = the legislation exists and is comprehensive; Partly = the legislation or mechanism exists but does not cover all aspects or is limited in its application; No = the legislation does not exist.

## Best practice

Victoria's legal framework requires the application of best practice for sustainable forest management. Best practice ensures that management activities do not impact on forest values such as biodiversity, soil and water quality, and cultural heritage. Best practice is also vital for occupational health and safety in forests.

The extent to which the legal framework requires the application of best practice is shown in Table 3. The legal framework is generally comprehensive, requiring the application of best practice for a range of activities across the majority of forest tenures.

## Indicator 7.1 Extent to which the legal framework (laws, regulations, guidelines) supports the conservation and sustainable management of forests

**Table 3: Legislative requirement to apply best practice for sustainable forest management activities by tenure category, 2005-06**

Source: Department of Sustainability and Environment

| Activities | Rating[A] | | |
|---|---|---|---|
| | State forest | Nature conservation reserve | Private land |
| Access to the forest | | | |
| Road planning, design and construction, maintenance and upgrades, construction of bridges and river crossings | Yes | Yes | Yes |
| Harvesting | | | |
| Harvesting design and planning, equipment use, wet weather and steep country restrictions, track and landing maintenance, water quality and stream protection | Yes | NA[B] | Yes |
| Conservation of other values | | | |
| Biodiversity, landscape, cultural heritage, soil and water quality | Yes | Yes | Yes |
| Forest establishment | | | |
| Reforestation | Yes | Yes | Yes |
| Maintaining forests | | | |
| Fire management | Yes | Yes | Yes |
| Pest, disease, weed control | Yes | Yes | Yes |
| Use of chemicals | Yes | Yes | Yes |
| Thinning | Yes | NA[B] | No |
| Non-wood products | Partly | Partly | No |
| Apiary | Yes | Yes | No |
| Grazing | Yes | Yes | No |
| Recreation | Yes | Yes | No |
| Socio-economic | | | |
| Occupational health and safety | Yes | Yes | Yes |

[A] Yes = there is a legislative requirement to apply best practice; Partly = there is a legislative requirement to apply best practice for this activity but this requirement does not cover all aspects or is limited in its application; No = there is no legislative requirement to apply best practice for this activity.

[B] Not applicable - commercial harvesting is not carried out in nature conservation reserves.


## References

Department of Sustainability and Environment (2006). *Sustainability Charter for Victoria's State Forests.* Department of Sustainability and Environment, Melbourne.

Department of Sustainability and Environment (2007). *Criteria and Indicators for Sustainable Forest Management in Victoria – Guidance Document.* Department of Sustainability and Environment, Melbourne.

# Indicator 7.2 Extent to which the institutional framework supports the conservation and sustainable management of forests

## Key Message

Victoria has a comprehensive institutional framework which provides for a range of forest management issues including planning and review, resource assessment, property rights, public participation, regulation of forest clearing, forest conservation and the cultural, social and environmental values associated with Indigenous Australians.

While the institutional framework is comprehensive for forest on public land, it does not apply to forest on private land for many aspects of sustainable forest management.

Victoria has strengthened its institutional frameworks for sustainable forest management by significantly reforming and clarifying management responsibilities, increasing community participation, development of an Environmental Management System, revising guidelines and planning documents, and enhancing independent audits of forest management activities.

## Rationale

This indicator examines the institutional frameworks that support the sustainable management of forests. Institutional frameworks provide mechanisms for the engagement of the wider community in the process of continuous improvement and sustainable management of forests.

## Background

Institutional frameworks support the capacity to deliver sustainable forest management through the maintenance of skills, knowledge and resources to support decision-making, as well as providing effective local and regional planning guidelines. A commitment to building community awareness, regional assessment and planning, and policy review is essential for sustainable forest management.

The institutional framework supports the conservation and sustainable management of forests by:

- Providing for public involvement activities and public education, awareness and extension programs, and making available forest-related information;
- Undertaking and implementing periodic forest-related planning, assessment, and policy review;
- Developing and maintaining human resource skills across relevant disciplines;
- Developing and maintaining efficient physical infrastructure to facilitate the supply of forest products and services, and supporting forest management; and
- Enforcing laws, regulations and guidelines.

## Status and trends

The extent to which the institutional framework supports the conservation and sustainable management of forests is shown in Table 1. Main findings include:

- Victoria has a comprehensive institutional framework for the conservation and sustainable management of forests. The framework provides for a range of forest management issues including planning and review, resource assessment, property rights, public participation, regulation of forest clearing, and forest conservation;
- The cultural, social and environmental values associated with Indigenous Australians are also reflected in Victoria's institutional framework;
- The institutional framework is comprehensive for State forest and nature conservation reserves. However, the framework does not apply to forest on private land for many aspects of sustainable forest management;
- Victoria's institutional framework actively encourages community participation in forest-related issues. Since 2002, the Victorian Government has continued to increase opportunities for community education and participation in sustainable forest management. DSE provides a range of education, awareness and extension programs, and community engagement activities including opportunities to be involved in specific forest management projects;
- Over the reporting period, Victoria strengthened its institutional frameworks for sustainable forest management by significantly reforming and clarifying management responsibilities, revising guidelines and planning documents, and enhancing independent audits of forest management activities; and
- Victoria's institutional framework has also been strengthened with the addition of the Environmental Management System (EMS). As part of the Victorian government's 2002 *Our Forests, Our Future* policy statement, DSE committed to developing an EMS for the sustainable management of Victoria's State forests. An EMS provides a systematic framework to assist the identification and management of significant environmental impacts that may occur as a result of forest activities (e.g. timber harvesting, fire, roading, regeneration, and recreation).

## Indicator 7.2 Extent to which the institutional framework supports the conservation and sustainable management of forests

### Table 1: Extent to which the institutional framework supports the conservation and sustainable management of forests by tenure category, 2005-06

Source: Department of Sustainability and Environment

| Extent to which the non-legislative policy framework provides for | Rating[A] | | |
|---|---|---|---|
| | State forest | Nature conservation reserves | Private |
| **Forest management** | | | |
| Management planning and review, policy review, accountable management body, dispute resolution, environmental values | Yes | Yes | Yes |
| Property rights | Yes | Yes | No |
| Periodic assessment of forest related resources | Yes | Yes | No |
| **Public participation** | | | |
| Public consultation for the development of policy and management plans | Yes | Yes | No |
| Publication of specific forest-related information | Yes | Yes | Yes |
| Allows public access to information related to forests | Yes | Yes | No |
| **Indigenous participation** | | | |
| Indigenous participation in management and planning | Yes | Yes | No |
| Recognises cultural values and native title rights | Yes | Yes | Yes |
| Recognises the customary and traditional rights, access to cultural heritage and for traditional activities, protection of Indigenous intellectual property | Yes | Yes | No |
| Allows traditional management on relevant public land | Yes | Yes | N/A |
| **Other aspects** | | | |
| Recognition of scientific values | Yes | Yes | Partly |
| Recognition of voluntary reserves on private land | N/A | N/A | Yes |
| Regulation of forest clearing | Yes | Yes | Yes |
| Resource assessment | Yes | Yes | No |
| Secure land tenure | Yes | Yes | Yes |
| Sustainable forest management an explicit objective | Yes | Partly | Partly |

[A] Yes = the legislation exists and is comprehensive; Partly = the legislation or mechanism exists but does not cover all aspects or is limited in its application; No = the legislation does not exist.

# Indicator 7.3 Extent to which the economic framework supports the conservation and sustainable management of forests

## Key Message

The economic framework for Victoria's forests has changed substantially over the reporting period. A key reform has been the creation of VicForests as a state-owned enterprise, while the hardwood plantation sector has continued to expand significantly in response to financial incentives.

## Rationale

This indicator assesses the extent to which the economic framework (economic policies and measures) supports the conservation and sustainable management of forests as well as the sustainable production of forest products, ecosystem services, and access to national and international markets.

## Background

Government policies on investment, taxation and trade influence the level of investment in forest conservation, forest-growing and timber-processing industries.

## Status and trends

The economic framework for Victoria's forests has changed substantially over the reporting period. A key reform has been the creation of VicForests as a state-owned enterprise. The hardwood plantation sector has continued to expand significantly in response to financial incentives.

### VicForests

In 2004, VicForests was created to manage commercial timber harvesting and sales in State forest. This has provided more transparency in the sale of timber resources by removing the potential conflict between regulatory and commercial functions within Government. One of the responsibilities of VicForests was to develop an open and competitive sales system for publicly-owned timber to ensure the greatest possible returns for hardwood timbers. VicForests is also responsible for the management of existing licences which grant commercial operators access to State forest timber.

### Other forest-related incentives

The Victorian Government has developed a range of incentives for forest establishment and management including:

- Establishment of plantations – Payments of up to $700 per hectare for the establishment of hardwood sawlog plantations on cleared private land. Payment is based on site assessment and grower capability. Projects include West Regional Agreement Hardwood Sawlog Plantations, Plantations for Greenhouse, and Box Ironbark and salinity area projects in the Wimmera, North East and Corangamite CMA's;
- Sawlogs for salinity – Allows landholders to tender for establishment funds. Tenders are evaluated on the basis of biodiversity, carbon sequestration and salinity benefits;
- Native forest management (for biodiversity, timber, water or other benefits) – Various market-based programs and pilots aimed at improved native vegetation management on private land have been developed. These include BushTender (biodiversity), CarbonTender (carbon and biodiversity), and EcoTender (terrestrial biodiversity, saline land, aquatic health, and carbon); and
- Environmental services (including biodiversity credits, salinity credits, and carbon credits) – The Victorian Government established BushBroker, which gives landholders the opportunity to establish a native vegetation credit on their property. A native vegetation credit is a gain in the quality or extent of native vegetation that is subject to a secure and ongoing agreement. BushBroker enables landholders to set a value for their native vegetation credits which can then be purchased by another party to offset permitted clearing.

# Indicator 7.4 Capacity to measure and monitor changes in the conservation and sustainable management of forests

## Key Message

Victoria's capacity to report on sustainable forest management is limited by data/information availability and an inability to report long term trends for most indicators. The most comprehensive data/information was available for forests on public land, particularly State forest, for which regular reporting on management performance and compliance is required. Where long-term data was unavailable, data used in this report will provide a baseline for future reporting.

To improve sustainable forest management monitoring and reporting improved data/information is required for native forest on private land, forest health and biodiversity, non-wood forest products, forested catchment water yields, native forest contribution to the global greenhouse gas balance, value of forest-derived ecosystem services, forest-dependent communities, and forest related Indigenous cultural and subsistence needs. In addition, the application of consistent monitoring methodologies is required to enable long term assessments of sustainable forest management.

## Rationale

The conservation and sustainable management of forests depends on the capacity to measure and monitor social, economic and environmental conditions. This indicator assesses the data available to report against Victoria's sustainable forest management indicators.

## Background

To successfully measure changes in Victoria's forests, a reporting system must be underpinned by adequate and ongoing data collection. This indicator provides an overview of the data available for each of the indicators reported. The availability of relevant and up-to-date information about Victoria's forests provides a measure of the capacity to demonstrate sustainable forest management. In turn, this allows forest managers to review and prioritise data collection activities to make future monitoring timely and relevant.

### Reporting on sustainable forest management in Victoria

Under the *Sustainable Forests (Timber) Act 2004* the Victorian Government is required to report on the condition and management of Victoria's forests every 5 years. Such reporting improves transparency, accountability and community engagement in forest management.

*Victoria's State of the Forest Report 2008* is the first report to use the *Criteria and Indicators for Sustainable Forest Management in Victoria* (Department of Sustainability and Environment, 2007). The 7 criteria and 45 indicators incorporate economic, environmental and social values and are consistent with the Montreal Process (1995), and the *Framework of Regional (Sub-National) Level Criteria and Indicators of Sustainable Forest Management in Australia* (Commonwealth of Australia, 1998). They were developed with the assistance of key experts, Government partners, and in consultation with the community.

# Indicator 7.4 Capacity to measure and monitor changes in the conservation and sustainable management of forests

## Status and trends

The capacity to report trends and the availability, coverage and currency of data used to address indicators is shown in Table 1 and Table 2. Due to differences in the requirements for each indicator (for example, some indicators depend on data for reporting, others are narrative in nature), it is not appropriate to compare data status between indicators. For more comprehensive information on data availability, see individual indicator pages. Main findings include:

### Availability of data/information for indicators

- The current capacity to report trends is generally poor with only 13 indicators having adequate data to fully report trends. Of the remaining indicators, 12 had partial capacity to report trends, 5 had limited capacity to report trends, and 14 had no capacity to report trends;
- Adequate data was available for 33 indicators, enabling some assessment based on recent data that covered much of the State;
- Data were not available for all indicators because some monitoring and management systems have not yet been developed. However, it is anticipated that more comprehensive data and information will be available in the future as knowledge improves;
- This is the first report to use the *Criteria and Indicators for Sustainable Forest Management in Victoria* (Department of Sustainability and Environment, 2007) which includes 9 new indicators not reported in the previous Victorian State of the Forests report. Where long-term data was unavailable for these new indicators, any data reported will provide a baseline for future reporting; and
- For some indicators, data was only available from national agencies. For example, data for most social indicators was supplied by the Australian Bureau of Statistics, and carbon data was obtained from the Australian Greenhouse Office. The data obtained from national agencies was generally insufficient to fully meet reporting requirements. This was mainly because the data categories used differed from those in Victoria, were amalgamations of native and plantation forest data, included non-forest related data, or did not fully represent all relevant forest sectors.

### Data/information availability by tenure

- The most comprehensive data/information is available for forests on public land for which governments require regular reporting. Inventories and assessments are undertaken regularly in all public forests, particularly those managed for timber production, to monitor condition and report on management performance and compliance. The most comprehensive data/information is available for State forest, with good data/information also available for nature conservation reserves; and
- Availability of data/information is generally poor for native forests on private land.

### Changes in data/information availability

- Because this is the first time that reporting has been undertaken using the new *Criteria and Indicators for Sustainable Forest Management in Victoria* (Department of Sustainability and Environment, 2007), it is difficult to assess changes in data/information availability since the last Victorian State of the Forests Report. However, data/information availability and the capacity to report trends has generally increased and will improve in the future with baseline data/information now available for many indicators.

## Indicator 7.4 Capacity to measure and monitor changes in the conservation and sustainable management of forests

### Identified data gaps

To improve sustainable forest management monitoring and reporting, the following data and information needs have been identified:

- Application of consistent methodologies to enable comparisons over time;
- Representative forest dependent indicator species need to be identified and monitoring programs developed;
- Improved data/information on:
  - native forest on private land and nature conservation reserves;
  - level of forest fragmentation and long term changes in the extent of forest types;
  - distribution of invasive species and their impacts on forest dependent native species;
  - annual production of non-wood forest products;
  - severity and extent of a range of impacts on forest health including fire, invasive species, drought, stock grazing, recreation and water regulation;
  - forested catchment water yields, including the impacts of fire and timber production;
  - soil quality;
  - contribution of native forest to the global greenhouse gas balance;
  - value of forest-derived ecosystem services;
  - degree of reuse and recycling of wood products;
  - annual number of visitors to State forest;
  - resilience of forest-dependent communities, including Indigenous communities; and
  - level to which Indigenous cultural and subsistence needs are met by forest management.

**Key to Tables 1 and 2**

| Rating | Report trend | Data coverage | Data currency | Data frequency |
|---|---|---|---|---|
| 🟢 | Able to report trends across all or most tenures | Whole State assessed | 1998+ | Annual–5-yearly |
| 🟠 | Partial capacity to report trends | Incomplete data | 1980–2001 | >5 years |
| 🔵 | Limited capacity to report trends | Case study | Incomplete | Once only |
| 🔴 | No capacity to report trends | No data | No data | No data |

## Indicator 7.4 Capacity to measure and monitor changes in the conservation and sustainable management of forests

### Table 1: Capacity to report trends in indicators and the coverage, currency and frequency of data used to address indicators (see key above)

| Indicator | Ability to report trend | Data coverage | Data currency | Data frequency |
|---|---|---|---|---|
| Criterion 1: Conservation of biological diversity | | | | |
| 1.1 Ecosystem diversity | | | | |
| 1.1a Area of forest by type and tenure | A | | | |
| 1.1b Area of forest type by growth stage | A | | | |
| 1.1c Area of forest type in protected zones | A | | | |
| 1.1d Fragmentation of native forest cover | | | | |
| 1.2 Species diversity | | | | |
| 1.2a The status of forest dependent species | | | | |
| 1.2b Area of habitat available for forest species | | | | |
| 1.2c Representative indicator forest species | | | | |
| 1.2d Degree of disturbance by invasive species | | | | |
| 1.3 Genetic diversity | | | | |
| 1.3a Species at risk from isolation | | | | |
| 1.3b Conservation efforts for forest species | | | | |
| Criterion 2: Maintenance of productive capacity of forest ecosystems | | | | |
| 2.1 Forest available for timber production | A | | | |
| 2.2 Volume of wood available | A | | | |
| 2.3 Annual production of wood products. | | | | |
| 2.4 Annual production of non-wood products | | | | |
| 2.5 Timber harvest area regenerated | | | | |
| Criterion 3: Maintenance of ecosystem health and vitality | | | | |
| 3.1 Agents affecting forest health | | | | |
| 3.2 Human-induced disturbance | | | | |
| Criterion 4: Conservation and maintenance of soil and water resources | | | | |
| 4.1 Forest assessed for risk to soil attributes | | | | |
| 4.2 Change in forested catchment water yield | | | | |
| 4.3 Change in forested catchment river health | | | | |
| Criterion 5: Maintenance of forest contribution to global carbon cycles | | | | |
| 5.1 Total forest biomass and carbon pool | | | | |
| 5.2 Contribution to greenhouse gas balance | | | | |

[A] Although data is collected on an annual basis, comparisons with previous data is not possible due to methodology changes.

## Indicator 7.4 Capacity to measure and monitor changes in the conservation and sustainable management of forests

**Table 1: Capacity to report trends in indicators and the coverage, currency and frequency of data used to address indicators (see key above). *continued***

| Indicator | Ability to report trend | Data coverage | Data currency | Data frequency |
|---|---|---|---|---|
| | | | | |
| 6.1a Value ($) of wood and wood products | 🟢 | 🟢 | 🟢 | 🟢 |
| 6.1b Value ($) and yield of non-wood products | 🔴 | 🔴 | 🔴 | 🔴 |
| 6.1c Value ($) of forest ecosystem services | 🔴 | 🔴 | 🔴 | 🔴 |
| 6.1d Reuse and recycling of wood products | 🔴 | 🔴 | 🔴 | 🔴 |
| | | | | |
| 6.2a Investment in forest management | 🟢 | 🟢 | 🟢 | 🟢 |
| 6.2b Investment in R&D and education | 🟢 | 🟢 | 🟢 | 🟢 |
| 6.2c Extension and use of new technologies | 🟢 | 🟢 | 🟢 | 🟢 |
| | | | | |
| 6.3a Forest utilised for recreation and tourism | 🔴 | 🟢 | 🟢 | 🔵 |
| 6.3b Recreation and tourism opportunities | 🟠 | 🟢 | 🟢 | 🟢 |
| 6.3c Number of visits per annum | 🔵 | 🟠 | 🟢 | 🟢 |
| | | | | |
| 6.4a Indigenous access and rights | 🔵 | 🟢 | 🟢 | 🟢 |
| 6.4b Places of cultural value | 🔵 | 🟢 | 🟢 | 🔵 |
| | | | | |
| 6.5a Employment in the forest sector. | 🟢 | 🟢 | 🟢 | 🟢 |
| 6.5b Average wage rates and injury rates. | 🟠 | 🟠 | 🟢 | 🟢 |
| 6.5c Resilience of forest dependent communities. | 🔴 | 🔴 | 🔴 | 🔴 |
| 6.5d Resilience of Indigenous communities. | 🔴 | 🔴 | 🔴 | 🔴 |
| 6.5e Indigenous subsistence and cultural needs. | 🔴 | 🔴 | 🔴 | 🔴 |
| | | | | |
| 6.6a Indigenous values in forest management. | 🟢 | 🟢 | 🟢 | 🟢 |
| | | | | |
| 7.1 Legal framework. | 🟢 | 🟢 | 🟢 | 🟢 |
| 7.2 Institutional framework. | 🟢 | 🟢 | 🟢 | 🟢 |
| 7.3 Economic framework. | 🟢 | 🟢 | 🟢 | 🟢 |
| 7.5 Capacity to conduct and apply R&D. | 🟠 | 🟠 | 🟢 | 🟢 |

## Indicator 7.4 Capacity to measure and monitor changes in the conservation and sustainable management of forests

**Table 2: Capacity to report trends, coverage, currency and frequency of data for indicators – number of indicators for each rating (see key above)**

| Rating | Report trend | Data coverage | Data currency | Data frequency |
|---|---|---|---|---|
| ● | 13 | 25 | 32 | 29 |
| ● | 12 | 8 | 1 | - |
| ● | 5 | - | - | 4 |
| ● | 14 | 11 | 11 | 11 |

## References

*Commonwealth of Australia (1998). Framework of Regional (Sub-National) Level Criteria and Indicators of Sustainable Forest Management in Australia.* Montreal Process Implementation Group, Canberra.

Department of Sustainability and Environment (2007). *Criteria and Indicators for Sustainable Forest Management in Victoria.* Department of Sustainability and Environment, Melbourne.

# Indicator 7.5 Capacity to conduct and apply research and development aimed at improving forest management, including development of scientific understanding of forest ecosystem characteristics and functions

## Key Message

Numerous forest related research and development programs are conducted by the Victorian Government. In addition, the Victorian Government invests in research through a range of organisations such as the University of Melbourne's School of Forest Ecosystem Science and the Arthur Rylah Institute for Environmental Research. Forest-related research and development programs are also undertaken by Cooperative Research Centres such as the Forestry CRC, Bushfire CRC, and Wood Innovations CRC.

## Rationale

A scientific understanding of forest ecosystem characteristics and functions is needed to underpin sustainable forest management. This indicator reports on the extent to which the legal, institutional and economic framework supports the capacity to conduct and apply research and development aimed at improving forest management.

## Background

Sustainable forest management requires in-depth knowledge of ecological, economic and social systems. This knowledge forms the basis for the development and implementation of:

- High level strategy and policy;
- Improved management practices;
- Operational procedures and standards;
- Strategic and operational plans;
- Training programs; and
- Performance monitoring and improvement systems.

## Status and trends

Numerous forest-related research and development programs are conducted by the Victorian Government. In addition, the Victorian Government invests in research through a range of organisations including universities and research institutes.

Two research institutes play a leading role in delivering forest ecology research for the Victorian Government. They are the University of Melbourne's School of Forest and Ecosystem Science (SFES, see case study below), and the Arthur Rylah Institute (ARI) for Environmental Research (within DSE). SFES focuses on forest management issues while ARI has a broad focus on biodiversity and its management across land tenures, including forests.

Forest-related research and development programs are also undertaken by Cooperative Research Centres such as the Forestry CRC, Bushfire CRC, and Wood Innovations CRC.

### Case Study: The School of Forest and Ecosystem Science

The School of Forest and Ecosystem Science (SFES) was established in 2004 as a joint initiative between the Department of Sustainability and Environment and the University of Melbourne. This collaboration has produced a world-class facility where students and researchers can focus on the study of forests.

SFES comprises more than 50 scientists working on many aspects of forest and ecosystem science. SFES collaborates with state and national research and land management agencies, and with many international institutions. The School is a formal partner in three Cooperative Research Centres – Bushfire, Wood Innovations and Forestry.

Engagement with research users and the application of research knowledge are major objectives of the School's research. These are achieved through a variety of formal and informal partnerships, presentations at seminars, workshops, and field days. Some research is commercialised and applied through formal agreements and patent arrangements.

Between 2004-05 and 2005-06, the Victorian Government provided $7.5 million for SFES to conduct research on a range of topics related to sustainability and the environment such as forest hydrology, fire ecology, climate change, carbon sequestration, forest industries, plantations, and sustainable forest management.

Source: School of Forest and Ecosystem Science