Australian Government

Department of Agriculture, Fisheries and Forestry

Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008

Policy Guidelines

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DEPARTMENT OF AGRICULTURE, FISHERIES AND FORESTRY

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Copies of this document are available from:

MIG Secretariat
Forest Industries Branch
Department of Agriculture Fisheries and Forestry
GPO Box 858
Canberra ACT 2601
Fax: (02) 6272 4875

Further information on the Montreal Process Implementation Group is available at:
http://www.daff.gov.au/forestry/international/fora/montreal

Cover images: Michael F. Ryan
Designed and typeset by: Fusebox Design

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Circular Pool, Walpole, Western Australia

Introduction

This document details the seven criteria and 44 indicators which together make up *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008 – Policy Guidelines*. These criteria and indicators are based on the international Montreal Process criteria and indicators originally developed in 1995 by 12 countries, including Australia, which collectively contain 60 per cent of the world's forests.

Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008 – Policy Guidelines has been developed in the context of contemporary Australian, state and territory legislation, international agreements, and national and state policies including the *1992 National Forest Policy Statement*. Principles recognised in the development and implementation of the indicators include: the precautionary principle, inter-generational equity, public participation, transparency and access to information, international good citizenship, user pays, and industry and regional development.

The criteria in this framework represent the broad forest values that Australians want enhanced or preserved, while the indicators provide measures of change in these criteria over time. Together, the criteria and indicators provide a tool for assessing progress towards the achievement of sustainable forest management.

This is Australia's second framework of criteria and indicators of sustainable forest management. The original 1998 framework was developed on the premise that reporting on progress in sustainable forest management is a process of continuous improvement. This process should be capable of evolving as knowledge increases and as Australian values, issues and concerns relating to forests are better understood.

This revised framework represents an improved understanding of the mechanisms to report sustainable forest management in the Australian context, with indicators that are relevant and meaningful at the forest management, state/territory and national levels, as appropriate.

This document provides an overview of the indicators, including the rationale for their inclusion in the framework, within each criterion. It is recognised that while challenges remain to report comprehensively on the management of Australia's extensive native and plantation forests on multiple land tenures, the framework of criteria and indicators represents a national goal to ensure forest management meets the broad range of associated environmental, cultural, social and economic values essential to sustainable forest management.

The criteria encompass:

1. Biological diversity
2. Productive capacity
3. Ecosystem health and vitality
4. Soil and water resources
5. Global carbon cycles
6. Socio-economic benefits
7. Legal, institutional and economic frameworks

Docking sawn timber

Criterion 1

Conservation of biological diversity

Indicator 1.1.a
Area of forest by forest type and tenure

Rationale

This indicator uses the area for each forest type over time as a broad measure of the extent to which forest ecosystems and their diversity are being maintained. Reporting on forest tenure aids our understanding of how different land management regimes may impact on forest biodiversity.

Indicator 1.1.b
Area of forest by growth stage

Rationale

This indicator measures the change in area of forest by growth stage to reflect how ecological processes and species associated with those processes change as forests grow. The age and size of trees is important in maintaining forest biodiversity.

Indicator 1.1.c
Area of forest in protected area categories

Rationale

This indicator uses the area and proportion of forest ecosystems reserved through formal and informal processes as a measure of the emphasis placed by society on the preservation of representative ecosystems as a strategy to conserve biodiversity.

Indicator 1.1.d
Fragmentation of forest cover

Rationale

This indicator describes the loss of forest cover and the spatial configuration of that loss. Fragmentation can impact on forest dwelling species and gene pools through changes in the connectivity of population's and the loss of species genetic variability.

Indicator 1.2.a
Forest dwelling species for which ecological information is available

Rationale

This indicator reports the level of information available to manage forest dwelling species and tracks changes in this knowledge over time. The amount of habitat, disturbance and life history information available to make management decisions indicates the capacity to assess risk to species and to implement conservation strategies.

Echidna (*Tachyglossus aculeatus*)

Indicator 1.2.b

The status of forest dwelling species at risk of not maintaining viable breeding populations, as determined by legislation or scientific assessment

Rationale

This indicator measures the conservation status of nationally listed threatened forest dwelling species. Documentation of this information over time allows analysis of changes to species' conservation status indicating the extent to which forest species biodiversity is being maintained.

Indicator 1.2.c

Representative species from a range of habitats monitored at scales relevant to regional forest management

Rationale

This indicator provides broad habitat, population, and range information for representative forest dwelling flora and fauna. Evidence of changing ranges or densities of forest dwelling species can be used to guide forest management activities so that they are consistent with maintenance of forest biodiversity.

Indicator 1.3.a

Forest associated species at risk from isolation and the loss of genetic variation, and conservation efforts for those species

Rationale

This indicator assesses the risks to loss of forest genetic variation and describes the formal measures designed to mitigate this risk. A loss of genetic diversity in species can result in a decreased ability to adapt to future environmental change, and thus a higher risk of extinction.

Indicator 1.3.b

Native forest and plantations of indigenous timber species which have genetic resource conservation mechanisms in place

Rationale

This indicator uses the coverage and implementation of formal genetic resource conservation mechanisms as a measure of the degree to which timber species' genetic resources are managed and conserved.

Green tree frog (*Litoria caerulea*)

Fragmented forest in agricultural landscape

Criterion 2

Maintenance of productive capacity of forest ecosystems

Indicator 2.1.a
Native forest available for wood production, area harvested, and growing stock of merchantable and non-merchantable tree species

Rationale
This indicator reports the capacity of forests to sustainably produce wood to meet society's needs into the future. The area of native forest available for wood production, the nature of the growing stock, and the area harvested over time provide means to demonstrate the sustainability of forest management.

Indicator 2.1.b
Age class and growing stock of plantations

Rationale
This indictor uses the area, age class and growing stock of native and exotic species plantations to assess the volume of timber that Australia's plantation forests can supply now and into the future.

Indicator 2.1.c
Annual removal of wood products compared to the volume determined to be sustainable for native forests, and the future yields for plantations

Rationale
This indicator measures the harvest levels of wood products in relation to future yields. The capacity to implement strategies to deal with changing demand for forest products based on future yields from both native and plantation forests is an integral part of sustainable forest management.

Indicator 2.1.d
Annual removal of non-wood forest products compared to the level determined to be sustainable

Rationale
This indicator is used to assess the sustainability of the harvest of non-wood forest products. These products can represent a significant asset base supporting the livelihoods of remote communities.

Indicator 2.1.e
The area of native forest harvested and the proportion of that effectively regenerated, and the area of plantation harvested and the proportion of that effectively re-established

Rationale
This indicator is used to assess the success of the re-establishment of forests after harvesting. Re-establishment is critical to the maintenance of the productive capacity of the forest.

Radiata pine (*Pinus radiata*) plantation, South Australia

Criterion 3

Maintenance of ecosystem health and vitality

Indicator 3.1.a
Scale and impact of agents and processes affecting forest health and vitality

Rationale
This indicator identifies the scale and impact on forest health of a variety of processes and agents, both natural and human-induced. Through the regular collection of this information, significant changes to the health and vitality of forest ecosystems can be monitored and measured.

Indicator 3.1.b
Area of forest burnt by planned and unplanned fire

Rationale
This indicator is used to provide an understanding of the impact of fire on forests through the reporting of planned and unplanned fire. Fire is an important part of many forest ecosystems in Australia and may have either a positive or negative impact on forest health and vitality.

New growth after a bushfire in the Grampians, Victoria

Criterion 4

Conservation and maintenance of soil and water resources

Indicator 4.1.a
Area of forest land managed primarily for protective functions

Rationale
The area of forest land where priority is given to protecting soil and hydrological functions provides an indication of the emphasis being placed by society on the conservation of these values. This indicator includes areas managed to protect soil and water by excluding incompatible activities.

Indicator 4.1.b
Management of the risk of soil erosion in forests

Rationale
This indicator assesses the extent to which the risk of soil erosion has been explicitly identified and addressed in forest management. The avoidance of soil erosion reflects the extent to which associated values, including soil fertility and water quality, are protected.

Indicator 4.1.c
Management of the risks to soil physical properties in forests

Rationale
This indicator measures the extent to which the risk to soil physical properties in forests has been explicitly identified and addressed. The protection of soil physical properties, including minimising soil compaction and redistribution, affects soil integrity and, as a consequence, many associated values.

Indicator 4.1.d
Management of the risks to water quantity from forests

Rationale
This indicator measures the extent to which the risk to water quantity has been explicitly identified and addressed in forest management. Water quantity is important for ecosystem health and water supply for human use.

Indicator 4.1.e
Management of the risks to water quality in forests

Rationale
This indicator measures the extent to which the risk to water quality has been explicitly identified and addressed in forest management. Water quality is important for forest ecosystem health and water supply for human use.

Water sampling

Criterion 5

Maintenance of forest contribution to global carbon cycles

Indicator 5.1.a
Contribution of forest ecosystems and forest industries to the global greenhouse gas balance

Rationale

This indicator assesses the contribution of Australian forests to the global carbon cycle. Forest management can have a significant positive or negative impact on the global carbon cycle.

Long term carbon storage in furniture

Stored carbon in sawn timber

Criterion 6

Maintenance and enhancement of long term multiple socio-economic benefits to meet the needs of societies

Indicator 6.1.a
Value and volume of wood and wood products

Rationale
This indicator measures the size and economic contribution of the wood products sector to Australia's economy. Analysis of trends in the value and volume of wood and wood products enables socio-economic benefits derived from the forest industry to be assessed.

Indicator 6.1.b
Values, quantities and use of non-wood forest products

Rationale
This indicator measures the quantities, values and usage of non-wood products. It enables socio-economic benefits to be monitored by ascertaining trends in quantities, values and usage of non-wood products.

Indicator 6.1.c
Value of forest-based services

Rationale
This indicator measures forest-based services such as ecosystem services, carbon credits, salinity mitigation and ecotourism. Forest-based services provide economic values and contribute to the sustainability of forests by providing significant social and environmental benefits.

Indicator 6.1.d
Production and consumption and import/export of wood, wood products and non-wood products

Rationale
This indicator measures the consumption of forest-based products in Australia. Consumption trends over time provide a measure of the ability of Australian forest and timber industries, through both domestic production and importation, to meet Australian society's demand for forest-based products and the industries contribution to the economy.

Indicator 6.1.e
Degree of recycling of forest products

Rationale
This indicator measures the extent to which recycling or reuse of forest products occurs. As global demand for forest products increase, there is a growing need to meet societal demands for recycling of forest products.

Stacking jarrah boards for export, Greenbushes, south west Western Australia

Indicator 6.2.a
Investment and expenditure in forest management

Rationale
This indicator quantifies investment and expenditure in developing, maintaining, and obtaining goods and services from forests. It provides an indication of the long term and short term commitment to forest management, further processing and other forest uses.

Indicator 6.2.b
Investment in research, development, extension and use of new and improved technologies

Rationale
This indicator monitors the investment in, and adoption of, new or improved technologies in forest management and in forest-based industries. It also quantifies the level of research and development. Significant investment in research, development and new technologies result in continual improvements to forest management practices.

Indicator 6.3.a
Area of forest available for public recreation/ tourism

Rationale
This indicator measures the area of forest available for use by the community for recreation and tourism purposes. This provides an indication of the emphasis placed by society on the management of forest for recreation and tourism.

Indicator 6.3.b
Range and use of recreation/tourism activities available

Rationale
This indicator assesses the range and number of recreation and tourism facilities provided in forests, their level of use and their contribution to the broader tourism sector. Appropriate and well managed facilities help to optimise visitor satisfaction as well as minimising environmental impacts associated with recreation and tourism.

Indicator 6.4.a
Area of forest to which Indigenous people have use and rights that protect their special values and are recognised through formal and informal management regimes

Rationale
This indicator monitors the degree to which land is placed under appropriate tenure classifications or management regimes to protect Indigenous peoples' values in forests. An acceptable level of accountability for the protection of Indigenous peoples' cultural, religious, social and spiritual needs and values is an essential part of forest management.

The Tree Top Walk in tingle forest, near Denmark, Western Australia

Indicator 6.4.b
Registered places of non-Indigenous cultural value in forests that are formally managed to protect those values

Rationale
This indicator measures and monitors management regimes for non-Indigenous cultural values, such as historical, research, education, aesthetic, and social heritage values. Maintaining these values is integral to the protection of non-Indigenous peoples values associated with forests.

Indicator 6.4.c
The extent to which Indigenous values are protected, maintained and enhanced through Indigenous participation in forest management

Rationale
This indicator measures the extent to which Indigenous people participate in forest management. Active participation in forest management reflects the relationship between people and the land, and the integration of Indigenous peoples values with forest management practise, policy and decision making.

Indicator 6.4.d
The importance of forests to people

Rationale
This indicator measures the range of attitudinal values that communities and individuals place on their forests. The importance of forests to society is exemplified through the value that people place on biodiversity, clean air and water, social equity or simply the knowledge that Australia's forests exist.

Indicator 6.5.a
Direct and indirect employment in the forest sector

Rationale
This indicator measures the level of direct and indirect employment in the forest sector. Employment is an important measure of the contribution of forests to viable communities and the national economy.

Indicator 6.5.b
Wage rates and injury rates within the forest sector

Rationale
This indicator measures the level of wage and injury rates in the forest sector. A sustainable industry will ensure high levels of workforce health and welfare and wage rates comparable with national averages for other occupations.

Logging crew in alpine ash (*Eucalyptus delegatensis*) forest

Indicator 6.5.c
Resilience of forest dependent communities to changing social and economic conditions

Rationale
This indicator provides a measure of the extent to which forest dependant communities are able to respond and adapt to change successfully. Resilient forest dependant communities will adapt to changing social and economic conditions, ensuring they remain viable into the future.

Indicator 6.5.d
Resilience of forest dependent Indigenous communities to changing social and economic conditions

Rationale
This indicator provides a measure of the extent to which forest dependant Indigenous communities are able to respond and adapt to change successfully. Resilient forest dependant Indigenous communities will adapt to changing social and economic conditions, ensuring they prosper into the future.

Criterion 7

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

Indicator 7.1.a
Extent to which the legal framework supports the conservation and sustainable management of forests

Rationale
This indicator outlines the support that the legal system gives to the sustainable management of forests. A legal system that ensures transparency and public participation in policy and decision-making processes supports the continuous improvements in sustainable forest management.

Indicator 7.1.b
Extent to which the institutional framework supports the conservation and sustainable management of forests

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

Indicator 7.1.c
Extent to which the economic framework supports the conservation and sustainable management of forests

Rationale
This indicator examines the extent to which Government policies support the conservation and sustainable management of forests. Government policies on investment, taxation and trade influence the level of investment in forest conservation, forest establishment and timber processing.

Indicator 7.1.d
Capacity to measure and monitor changes in the conservation and sustainable management of forests

Rationale
This indicator examines the capacity of forest owners and agencies to measure and monitor changes in the forest and the impact of forest activities. A comprehensive measurement and monitoring programme provides the basis for forest planning to support sustainable management.

Indicator 7.1.e
Capacity to conduct and apply research and development aimed at improving forest management and delivery of forest goods and services

Rationale
This indicator reports on the scientific understanding of Australian forest ecosystem characteristics and functions needed to underpin sustainable forest management. Research, inventory and the development of assessment methodologies provide the basis for sustainable forest management.

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