

# Montreal Process Criteria and Indicators (second edition - 2007)

## Criterion 1: Conservation of biological diversity

### 1.1. Ecosystem Diversity

1.1.a Area and percent of forest by forest ecosystem type, successional stage, age class, and forest ownership or tenure

1.1.b Area and percent of forest in protected areas by forest ecosystem type, and by age class or successional stage

1.1.c Fragmentation of forests

### 1.2. Species Diversity

1.2.a Number of native forest-associated species

1.2.b Number and status of native forest-associated species at risk, as determined by legislation or scientific assessment

1.2.c Status of on site and off site efforts focused on conservation of species diversity

### 1.3. Genetic Diversity

1.3.a Number and geographic distribution of forest-associated species at risk of losing genetic variation and locally adapted genotypes

1.3.b Population levels of selected representative forest-associated species to describe genetic diversity

1.3.c Status of on site and off site efforts focused on conservation of genetic diversity

## Criterion 2: Maintenance of productive capacity of forest ecosystems

2.a Area and percent of forest land and net area of forest land available for wood production

2.b Total growing stock and annual increment of both merchantable and non-merchantable tree species in forests available for wood production

2.c Area, percent, and growing stock of plantations of native and exotic species

2.d Annual harvest of wood products by volume and as a percentage of net growth or sustained yield

2.e Annual harvest of non-wood forest products

## Criterion 3: Maintenance of forest ecosystem health and vitality

3.a Area and percent of forest affected by biotic processes and agents (e.g. disease, insects, invasive alien species) beyond reference conditions

3.b Area and percent of forest affected by abiotic agents (e.g. fire, storm, land clearance) beyond reference conditions

## Criterion 4: Conservation and maintenance of soil and water resources

### 4.1 Protective function

4.1.a Area and percent of a forest whose designation or land management focus is the protection of soil or water resources

### 4.2 Soil

4.2.a Proportion of forest management activities that meet best management practices or other relevant legislation to protect soil resources

4.2.b Area and percent of forest land with significant soil degradation

### 4.3 Water

4.3.a Proportion of forest management activities that meet best management practices or other relevant legislation to protect water related resources

4.3.b Area and percent of water bodies, or stream length, in forest areas with significant change in physical, chemical or biological properties from reference conditions

## Criterion 5: Maintenance of forest contribution to global carbon cycles

5.a Total forest ecosystem carbon pools and fluxes

5.b Total forest product carbon pools and fluxes

5.c Avoided fossil fuel carbon emissions by using forest biomass for energy



## Criterion 6: Maintenance and enhancement of long-term multiple socio-economic benefits

### 6.1 Production and consumption

6.1.a Value and volume of wood and wood products production, including primary and secondary processing

6.1.b Value of non-wood forest products produced or collected

6.1.c Revenue from forest based environmental services

6.1.d Total and *per capita* consumption of wood and wood products in round wood equivalents

6.1.e Total and *per capita* consumption of non-wood forest products

6.1.f Value and volume in round wood equivalents of exports and imports of wood products

6.1.g Value of exports and imports of non-wood forest products

6.1.h Exports as a share of wood and wood products production, and imports as a share of wood and wood products consumption

6.1.i Recovery or recycling of forest products as a percent of total forest products consumption

### 6.2 Investment in the forest sector

6.2.a Value of capital investment and annual expenditure in forest management, wood and non-wood forest product industries, forest-based environmental services, recreation and tourism

6.2.b Annual investment and expenditure in forest-related research, extension and development, and education

### 6.3 Employment and community needs

6.3.a Employment in the forest sector

6.3.b Average wage rates, annual average income and annual injury rates in major forest employment categories

6.3.c Resilience of forest-dependent communities

6.3.d Area and percent of forests used for subsistence purposes

6.3.e Distribution of revenues derived from forest management

### 6.4 Recreation and tourism

6.4.a Area and percent of forests available and/or managed for public recreation and tourism

6.4.b Number, type, and geographic distribution of visits attributed to recreation and tourism and related to facilities available

### 6.5 Cultural, social and spiritual needs and values

6.5.a Area and percent of forests managed primarily to protect the range of cultural, social and spiritual needs and values

6.5.b The importance of forests to people

## Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management

### 7.1. Extent to which the legal framework (laws regulations, guidelines) supports the conservation and sustainable management of forests, including the extent to which it:

7.1.a. Clarifies property rights, provides for appropriate land tenure arrangements, recognizes customary and traditional rights of indigenous people, and provides means of resolving property disputes by due process

7.1.b. Provides for periodic forest-related planning, assessment, and policy review that recognizes the range of forest values, including coordination with relevant sectors

7.1.c. Provides opportunities for public participation in public policy and decision making related to forests and public access to information

7.1.d. Encourages best practice codes for forest management

7.1.e. Provides for the management of forests to conserve special environmental, cultural, social and/or scientific values

### 7.2. Extent to which the institutional framework supports the conservation and sustainable management of forests, including the capacity to:

7.2.a. Provide for public involvement activities and public education, awareness and extension programs, and make available forest related information

7.2.b. Undertake and implement periodic forest-related planning, assessment, and policy review including cross-sectoral planning and coordination

7.2.c. Develop and maintain human resource skills across relevant disciplines

7.2.d. Develop and maintain efficient physical infrastructure to facilitate the supply of forest products and services and support forest management

7.2.e. Enforce laws, regulations and guidelines

### 7.3. Extent to which the economic framework (economic policies and measures) supports the conservation and sustainable management of forests through:

7.3.a. Investment and taxation policies and a regulatory environment which recognize the long-term nature of investments and permit the flow of capital in and out of the forest sector in response to market signals, non-market economic valuations, and public policy decisions in order to meet long-term demands for forest products and services

7.3.b. Non-discriminatory trade policies for forest products

### 7.4. Capacity to measure and monitor changes in the conservation and sustainable management of forests, including:

7.4.a. Availability and extent of up-to-date data, statistics and other information important to measuring or describing indicators associated with criteria 1-7

7.4.b. Scope, frequency and statistical reliability of forest inventories, assessments, monitoring and other relevant information

7.4.c. Compatibility with other countries in measuring, monitoring and reporting on indicators

### 7.5. Capacity to conduct and apply research and development aimed at improving forest management and delivery of forest goods and services, including:

7.5.a. Development of scientific understanding of forest ecosystem characteristics and functions

7.5.b. Development of methodologies to measure and integrate environmental and social costs and benefits into markets and public policies, and to reflect forest related resource depletion or replenishment in national accounting systems

7.5.c. New technologies and the capacity to assess the socioeconomic consequences associated with the introduction of new technologies

7.5.d. Enhancement of ability to predict impacts of human intervention on forests

7.5.e. Ability to predict impacts on forests of possible climate change

