

## Indicator 62

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

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Since the early 1980s, considerable effort has been devoted to encouraging countries to produce compatible forest statistics, especially the countries working together in the United Nations (UN) Food and Agriculture Organization/UN Economic Commission for Europe (FAO/UNECE) Forest Resource assessment process (<http://www.fao.org/forestry/fo/fra/main/index.jsp>). The need to demonstrate the sustainability of a country's forest management has made the data compatibility issue more urgent.

Countries now support a common set of definitions and protocols for calculating fundamental data on forest land (i.e., area of forest and wood volume). Further, in the 1990s countries developed sets of criteria and indicators (C&I) to characterize sustainable forest management (SFM) and provide a framework for reporting on national progress toward that goal. The United States works with 11 other countries, called the Montreal Process (MP), to develop implement such a set of criteria and indicators.<sup>1</sup> Using the C&I, national reports are to be completed with data that will meet the expectations of local, international, and international audiences and be comparable to data in other country reports.

### **Issue:**

Recognizing the progress in compatible forest data among countries, is further work needed? The question is complicated by what do we mean by compatibility, how the ambiguity of indicators affects compatibility, and how closely does U.S. data have to compare with other country data? A precise answer to the compatibility question would require a detailed survey of all data collected for the Montreal Process C&I from the 11 MP countries. This is not practical. An accurate assessment, however, can be made using the results of a workshop held in 2001 to build the MP countries' ability to report on the C&I.<sup>2</sup>

### **What do we mean by compatible?**

For the purpose of this paper, five levels of compatibility were defined:

1. Any data presented by a country for an agreed-to MP indicator are adequate to maintain that a country has comparable data. Such multicountry data, however, would probably be difficult to meaningfully present on a single graphic or table because data measuring different forest, social, or economic attributes will be presented because

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<sup>1</sup> The Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests (commonly known as the Montreal Process) consists of the United States, Canada, Russia, Japan, Korea, China, Australia, New Zealand, Chile, Argentina, Uruguay, and Mexico. For more information, visit [http://www.mpci.org/home\\_e.html](http://www.mpci.org/home_e.html).

<sup>2</sup> The results of this workshop can be viewed at [http://www.mpci.org/meetings/meetings\\_e.html](http://www.mpci.org/meetings/meetings_e.html).

this is what countries collect (i.e., for Indicator 3.a, acres affected by fire versus fire and insect damage).

2. Data for the identical resource, social, or economic attributes are reported on by countries, i.e., acres of fire burned, extent of forest type defined by dominant tree species, and so on. Such multicountry data can be presented in tables or graphs; however, extensive footnotes are required because these data were collected using different protocols. For example, one country defines forest land as land covered by at least 10 per cent tree cover while another uses 20 percent tree cover.
3. Identical data are presented (as in #2, 3, or 4), but some countries must aggregate their data into broad categories to make them compatible with the data of others. For example, because of the differences in ecosystems, broad reporting categories will have to be acceptable for Indicators 1.1a reporting in the 2003 Overview Report (i.e., using a classification such as broadleaf and conifer instead of beech-maple, cottonwood, or Douglas fir that may have no counterparts in other countries). Reporting in broad categories may not, however, be acceptable for adjacent countries with similar ecosystems. This is because the purpose of the indicator is to measure change in forest biodiversity. Broad classifications do not accomplish this.
4. Identical specific data are collected and reported (as in #2) using identical protocols. In addition, the data are gathered are statistically comparable and suitable for use in graphs or tables without extensive footnotes.
5. Statistically comparable data, as in #4, are available over time thus providing the opportunity to make multinational displays of trends. This is an implied goal of the MP indicators.

The MP C&I indicators were negotiated with enough ambiguity to enable countries to use their existing data. However, this flexibility perpetuates the ability of countries to collect data based on older national systems. Two examples illustrate this point. First, although all countries agreed to report on the extent of forest by “forest type” (Indicator 1.a), the term forest type has been interpreted differently. The best some countries can report on is forest subclass (hardwood, softwood, etc.) while the United States can report by forest alliances (dominant tree cover i.e., red oak, white oak, or forest vegetation associations (i.e., red oak with huckleberry under story). In addition, the United States will report on the extent, distribution, and change of these “forest types” over time. Many other countries will report only the current status of perhaps one of these elements.

### Proposal

In 2002, the Technical Advisory Committee (TAC) of the MP identified seven indicators that countries agreed to report on collectively for the Montreal Process 2003 Overview Report. The seven indicators will serve as a case study for how compatible data are among the Montreal Process countries.<sup>4</sup> The indicators in the following chart display indicators that all the 12 Montreal Process countries agreed to report on. These indicators are associated with traditionally collected data or long established programs in most countries. They should be easy to report in common on.

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<sup>4</sup> Re results of the TAC work can be viewed at [http://www.mpci.org/meetings/meetings\\_e.html](http://www.mpci.org/meetings/meetings_e.html).

During the process of determining how to construct 12 country displays for each indicator, it became clear that the 12 country data could not be meaningfully or easily be displayed on 1 graph or table (the data would not satisfy the compatibility levels 2, 3, 4, or 5). A 2003 Overview Report using data that only met level 1 would be of limited value. Because the data from the 12 countries could not meet Criteria 2, 3, 4, or, 5; the TAC agreed to report on only portions of the seven indicators and that protocols would be developed for each country to construct compatible national data.

As it turns out, countries have data for only one indicator (1.1a) that can easily be used for the Overview Report. The United States, however, will have to generalize its data. The resulting generalized data may be unacceptable to U.S. forest stakeholders (i.e., reporting forest subclass versus forest alliance). Although differing ecosystems among continents explain the need to report forest type by forest subclass, it would be advantageous if U.S., Canadian, and Mexican forest type data were compatible. Canada and Mexico do not have data for Indicator 1.1a compatible to U.S. data.

Table 1. Seven Indicators that Montreal Process Countries Will Report in Common for the Montreal Process Overview Report

<b>Criterion</b>	<b>Indicators By Country</b>										
	<b>Argenti na</b>	<b>Austr alia</b>	<b>Canad a</b>	<b>Chil e</b>	<b>Chi na</b>	<b>Japa n</b>	<b>Kore a</b>	<b>NZ</b>	<b>Russ ia</b>	<b>US</b>	<b>Urugu ay</b>
Biodiversity											
<b>Ext of forest by forest type</b>	1.1.a	1.1.a	1.1.a	1.1.a	1.1.a	1.1.a	1.1.a	1.1.a	1.1.a	1.1.a	1.1.a
<b>Forest Productivity</b>											
Area of Forest and net forest available for timber production	2.a	2.a	2.a	2.a	2.a	2.a	2.a	2.a	2.a	2.a	2.a
<b>Forest Health</b>											
Area and percentage of forest affected by processes or agent	3.a	3.a	3.a	3.a		3.a	3.a	3.a	3.a	3.a	3.a
<b>Soil and water</b>											
Area of forest managed primarily for protective functions	4.b	4.b	4.b	4.b		4.b	4.b		4.b		4.b
<b>Carbon</b>											
<b>Total</b>	5.a?	5.a	5.a		5.a	5.a	5.a	5.a	5.a	5.a	

forest biomass and carbon pool	this okay?]										
<b>Social and Economic</b>											
Direct and indirect employment	6.5.a	6.5.a	6.5a	6.5.a	6.5.a	6.5.a	6.5.a	6.5.a	6.5.a	6.5a	6.5a
Institutions	<b>All narrative data</b>										
Scope, frequency, and statistical reliability of forest inventory		7.4.b	7.4b	7.4b			7.4.b	7.4.b	7.4.b	7.4.b	7.4b

The following compatibility assessment was completed by the TAC for each of the seven indicators that will be reported on in the 2003 report.

- Indicator 1.1a-- Extent of area by forest type
  - The U.S. data must be aggregated into broad forest subclasses– conifer, broad-leaf, mixed. Few countries have forest type data (statistical or spatial) as detailed as Society of American Foresters cover types, or data to reveal change in forest type over time.
- 2.a Area of forest land available for timber production
  - All countries have compatible data that meet a common definition of forest land available for timber production. Country data, however, reflect the use of different economic and environment criteria to classify land. Extensive foot notes will be required.
- 3.a Area and percent of forest affected by processes—fire
  - Fire damage is only a portion of a more inclusive indicator (3.a) that all countries were asked to report on. Again, fire data are measured differently among countries. Some country statistics, as in the United States, include nonforest land burned. Few countries have historic data similar to the United States to construct trends required by the indicator.
  - Many countries do not have data on other agents affecting forests as the United States does (i.e., pest and invasive species data).

- 4.b Area and percent of forest managed for protective purposes (soil and water)
  - There are few existing protocols, in the United States or elsewhere, for collecting or estimating these data. The TAC, therefore, suggests a narrative discussion of the indicator for the 2003 Overview Report. Some countries will make quantified reports based on sound and accepted estimates. The assumptions used by each country to estimate the area protected must be footnoted.
- 5.a Total forest ecosystem carbon
  - Not all countries have above and below ground carbon data. Only the countries with large soil carbon stocks have calculated soil carbon. Data among countries with data should be comparable because of the use of climate change protocols.
- 6.5a Direct and indirect employment
  - Many countries do not maintain figures for indirect employment. Therefore, only direct employment will be reported in the Overview Report the TAC had to specify what will be included.
- 7.4b Scope and frequency of forest inventories
  - This will be a narrative presentation addressing the commonalities. Data are compatible.

Thus, it is clear that no one country has data that are comparable to data in most other countries to the extent even extent required by Criteria 3.

Conclusion:

The compatibility of U.S. forest data with the forest data of other countries is low. Over the last 2 decades, however, the foundation for improving data compatibility among countries has been established. Definitions for common technical terms have been developed and agreed upon. Through the identification of criteria and indicators for sustainable forest management, countries have established a common framework for the data needed to meet contemporary management needs. As countries increasingly realize that sustainability challenges are not only trans-boundary but transcontinental, more progress will be made in data compatibility.

The 2003 Reports produced by the MP countries constitutes a collaborative process by countries to highlight common data problems and correct them. United States participation in the Montreal Process has already had a significant effect its national inventory design, research, and the coordination of data collection at different scales by different organizations.