

Developing and Designing Environmental Indicators

**What are the key processes, lessons learned
in the provinces/territories?**

*Prepared for Canadian Sustainability Indicators Network
Learning Event September 22, 2005*

Introduction

- Environmental indicators is still an “emerging” discipline
- Provinces/territories are at different levels and apply indicators in different ways:
 - SOE/descriptive indicators
 - sustainability indicators
 - performance indicators

Introduction (cont'd)

Three Stages / Types of Indicators

- **Descriptive Indicators (State of the Environment Reporting)**
 - Focus on “what is happening to the environment” – trends in degradation or improvement, e.g.:
 - Average concentrations of ground-level ozone

- **Sustainability Indicators (Sustainability Reporting):**
 - Focus on a range of issues (ideally) broad enough to permit a complete appraisal of systems spanning both natural and managed environmental systems (2005 Environmental Sustainability Index), e.g.;
 - CO2 emissions per capita in one country compared to another

- **Performance Indicators (Business Reporting):**
 - Focus on “does it matter?” - not only trends, but distance to some threshold or goal, set by environmental policy; e.g.:
 - Reduction in nitrogen oxide emissions (total compared to target)

Introduction (cont'd)

Emerging Trends (?)

- Indicators are being applied for a range of purposes; e.g.:
 - for internal policy/program management
 - emerging issues identification
 - planning & priority setting purposes
 - external reporting, outreach purposes

- A move away from?
 - large SOE reports with 100s of indicators
 - to performance and sustainability reporting with fewer, focused sets of indicators

- Indicators are increasingly (?) applied in an integrated fashion?
 - Priority and goal-setting (Annual Business Report)
 - Public reporting (transparency and accountability)

Key Questions

The Process of Developing and Applying Indicators: What are some of the key “Lessons Learned”?

- The process of **developing** indicators
 - What are the key organizational issues? Key steps, initiatives?
 - What kind of outreach and partnership efforts?
 - Internal stakeholders?
 - External stakeholders?
 - What were/are some of the key challenges?

- **Applying** (using) indicators:
 - How to ensure organizational buy-in?
 - Governance: who is in charge?
 - Ongoing development/improvement of indicators?

Alberta Environment

With Brian Free, Environmental Reporting Coordinator

- *Legal drive: Alberta's Environmental Protection and Enhancement Act*
- *1994: first Alberta SOE report – 1999*
- *2005: On-line SOE reporting:*
 - Air
 - Waste
 - Water
 - Biodiversity
 - Climate
 - Land
- *Strong focus on Performance Indicators: Annual Ministry of Environment Report:*
 - Air Quality Index
 - Surface Water Quality Index
 - Reduction of Municipal Solid Waste to Landfills
 - Pulp Production
 - Government Action to Improve Energy Productivity
 - Action by Alberta Organizations to Improve Energy Efficiency

B.C. Ministry of Water, Land and Air Protection

With Linda Gilkeson, SOE Reporting

- *SOE Reports: Environmental Trends*
 - 1998
 - 2000
 - 2002

- *2002: Environmental Trends in British Columbia:*
 - Human health and environment
 - Water
 - Toxic contaminants
 - Climate change
 - Stewardship
 - Biodiversity

- *2002 - Indicators of Climate Change for British Columbia*
- *2004 - State of British Columbia's Forests*
- *2005 - The Coast and Marine Environment of British Columbia*

- *Annual Service Plan Report 2003-04*

B.C. Ministry Water, Land and Air Protection

- *Transboundary Projects*
 - Georgia Basin-Puget Sound Ecosystem Indicators Report, 2002
 - Georgia Basin – Puget Sound Ecosystem Indicators, 2005, in progress
 - Mackenzie River Basin: State of the Aquatic Ecosystem Report, 2003

Manitoba Conservation

With Glen Holmes, Sustainable Resource Management Branch

- *1991, 1993, 1995, 1997: SOE Reporting (discontinued)*

- *1998: The Sustainable Development Act*

- *2005: Sustainability Report for Manitoba:*
 - *Natural Environment Indicators*
 - *Economy Indicators*
 - *Social Well-Being Indicators*
 - *Ecological Foot-Print*

<http://www.gov.mb.ca/conservation/>

Nova Scotia Department of Environment and Labour

- *State of Environment Report – 1998*
- *Current initiative:*
 - Nova Scotia Department of Environment and Labour
 - Indicators being developed for internal priority setting and resource allocation

Ontario Ministry of Environment

With Dan Mulrooney and Tim Bellhouse, Ontario Parks Branch

- *State of the Forest - 2001, 2007*
- *State of Protected Areas – 2007*
- *Ontario Parks Monitoring Framework*

Développement Durable, de l'Environnement et des Parcs du Québec

With Benoit Limoges, Centre de coordination de la biodiversité du
Québec

- *Quebec State of the Environment – 1987
(publication)*
- *Quebec State of the Environment - 1992
(publication)*
- *Quebec in Statistics – 2000 (publication)*
- *Web site with pollutant indicators - 2002-2003*

Prince Edward Island Department of Fisheries, Aquaculture and Environment

■ *State of Environment Report 2003*

- *Drinking water*
- *Surface water*
- *Climate change*
- *Energy use*
- *Air quality*
- *Biodiversity*
- *Pesticides*
- *Waste management*
- *Environmental Stewardship*
- *Soil Quality*
- *Land use*

<http://www.gov.pe.ca/fae/state/index.php3>

Saskatchewan Environment

- *2005 State of the Environment Report (Stress, Condition, and Response Indicators):*
 - Water Quality and Quantity
 - Prairie and Forest Biodiversity
 - Invasive exotic species
 - Agricultural activity
 - Non-renewable resource activity
 - Climate change
 - Waste management
 - Human population
 - Stewardship (number of stewards)

http://www.se.gov.sk.ca/media/Saskatchewan%20Environmentnewsreleases/state_of_env.htm

Yukon Department of Environment

With Michael White, Department of Environment

- *Legal drive: Yukon Environment Act*
- *Yukon State of the Environment Report 1995*
 - *Yukon SOE Report 1997 (air-quality & climate change)*
- *Yukon State of the Environment Report 1999*
 - *Yukon SOE Interim Report 2000*
 - *Yukon SOE Interim Report 2001*
- *Yukon State of the Environment Report 2002:*
 - *Air and Atmosphere*
 - *Climate Change*
 - *Water*
 - *Land*
 - *Fish and Wildlife*
 - *Ecosystems*
 - *Community View*