

The Maple Leaf in the OECD

CANADA'S ENVIRONMENTAL PERFORMANCE
BACKGROUND



David
Suzuki
Foundation

SOLUTIONS ARE IN OUR NATURE

Backgrounder: Canada's Environmental Performance

Introduction

The study uses the latest data published by the Organization of Economic Cooperation and Development (OECD) to assess Canada's performance relative to 24 other developed countries based on 28 environmental indicators. The study also analyzes the factors that determine Canada's environmental performance. This study is completed by a research team in the School of Resource and Environmental Management at Simon Fraser University comprised of Dr. Thomas Gunton, Director of the Resource and Environmental Planning Program and Ken Calbick, Senior Research Associate.

Study Methodology

The study uses a methodology developed by the SFU research team over the last five years. The methodology is based on the OECD pressure-state-response model and the OECD environmental indicator series. Data for the study are based on OECD statistics. Countries are ranked relative to each other in terms of performance on 28 environmental indicators. The rankings are reported by indicator and are converted to an index using OECD methodology. The indicator values are summed to provide an overall environmental score for each country. The trends are also recorded for each indicator for each country from 1992 to determine if environmental performance is improving or deteriorating. The analysis of factors determining environmental performance is based on statistical techniques to assess the relationship between environmental performance and factors that may determine environmental performance. Based on a literature review seven factors are identified and tested for their role in explaining Canada's environmental performance. The factors include: climate, population growth, economic output, industrial structure, energy prices, environmental governance, and technological development.

Findings

The overall ranking of countries is provided in table 1. The results show that Canada ranks close to last in environmental performance: 24th out of 25 countries. Only the

United States ranks below Canada. The top three performers are Denmark, Sweden, and Norway.

Performance by indicator is summarized in table 2. The results show that:

- Canada is the worst performer on three indicators (volatile organic compounds emissions, carbon monoxide emissions, and nuclear waste)
- Canada has the second worst record on another three indicators (energy intensity, environmental pricing, and sulphur oxides emissions)
- Canada performance received an F on 15 of the 28 environmental indicators and an A on 5 indicators
- Canada's performance has deteriorated on one-half of the 28 indicators

Factors Affecting Canada's Environmental Performance

Canada's environmental performance can be influenced by a number of factors including: climate, population growth, economic output, industrial structure, energy prices, environmental governance, and technological development. The role of these factors in explaining Canada's environmental performance was assessed by statistical analysis. .

The first step in the analysis was to identify which of the seven factors affect environmental performance of OECD countries. The second step in the analysis was to assess the role of these factors in determining Canada's environmental performance. This was done by a showing what Canada's environmental rank would be if Canada adopted best practice environmental policies of other OECD countries. The results summarized in table 3 show that if Canada adopted environmental policies equivalent to the average OECD country, Canada's overall environmental rank would improve from 24 to 12th. If Canada adopted environmental policies equivalent to the top three OECD countries, Canada's environmental rank would improve from 24 to 1st.

Conclusions

These results of the analysis are encouraging because they show that Canada's poor environmental performance is not due to natural factors such as climate, industrial structure, and geography that are beyond its control. Instead, Canada's poor record is due to poor environmental policies that it can control. The study proves that if Canada strengthened its environmental policies, Canada could become a world leader in environmental sustainability.

Table 1: Overall country ranks

| COUNTRY | |
|----------------|-----------|
| Denmark | 1 |
| Sweden | 2 |
| Norway | 3 |
| Switzerland | 4 |
| Germany | 5 |
| Austria | 6 |
| Netherlands | 7 |
| Italy | 8 |
| United Kingdom | 9 |
| Finland | 10 |
| New Zealand | 11 |
| Korea | 12 |
| Spain | 13 |
| Japan | 14 |
| Greece | 15 |
| France | 16 |
| Ireland | 17 |
| Czech Republic | 18 |
| Portugal | 19 |
| Australia | 20 |
| Luxembourg | 21 |
| Iceland | 22 |
| Belgium | 23 |
| Canada | 24 |
| United States | 25 |

Table 2: Canada's rank by environmental indicator

| INDICATOR | RANK | GRADE |
|--|-------------|--------------|
| Carbon Monoxide (kg./cap.) | 25 | F |
| Nuclear Waste (kg./cap.) | 25 | F |
| Volatile Organic Compounds (kg./cap.) | 25 | F |
| Energy Intensity (toe/\$ of GDP) | 24 | F |
| Environmental Pricing (% of GDP) | 24 | F |
| Sulphur Oxides (kg./cap.) | 24 | F |
| Energy Consumption (toe/cap.) | 23 | F |
| Nitrogen Oxides (kg./cap.) | 23 | F |
| Vehicular Use (vehicle km./cap.) | 23 | F |
| Greenhouse Gas (tonnes/cap.) | 22 | F |
| Water Consumption (cu. m./cap.) | 22 | F |
| Renewable Energy without Hydro (% of production) | 19 | F |
| Protected Areas (class I-VI as % of land area) | 17 | F |
| Number of Species at Risk | 16 | B |
| Official Development Assistance (% of GNI) | 14 | F |
| Recycling Municipal Waste (%) | 10 | D |
| Timber Harvest to Timber Growth Ratio | 9 | C |
| Pollution Abatement Expenditure (% of GDP) | 8 | C |
| Proportion of Species at Risk | 8 | C |
| Sewage Treatment (%) | 8 | B |
| Ozone Depleting Substances (kg./cap.) | 7 of 10 | A |
| Protected Areas (class I-III as % of land area) | 6 | F |
| Pesticide Use (kg/km ² arable land) | 6 | A |
| Renewable Energy with Hydro (% of production) | 5 | D |
| Municipal Waste (kg./cap.) | 5 | B |
| Livestock Intensity (livestock units/ sq. km. arable land) | 5 | A |
| Timber Harvest (cu. m./sq. km.) | 5 | A |
| Fertilizer Use (tonnes/ sq. km. arable land) | 3 | A |

Table 3: Changes in Canada's environmental rank with changes in environmental policy

| CATEGORY | CANADA'S ACTUAL RANK | CANADA'S RANK WITH IMPROVED POLICIES | |
|---------------------|----------------------|--------------------------------------|-------------------------------|
| | | ADOPT OECD AVERAGE POLICIES. | ADOPT OECD TOP THREE POLICIES |
| Overall | 24 | 14 | 1 |
| Waste and Pollution | 25 | 14 | 1 |
| GHG Emissions | 22 | 7 | 1 |