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# Institutional Perspective on the SEEA

## UNSD SEEA Training of Trainers Seminar

July 7-10, 2014, New York

Joe St. Lawrence

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# **“Beyond GDP”**

*“...we often draw inferences about what are good policies by looking at what policies have promoted economic growth; but if our metrics of performance are flawed, so too may be the inferences that we draw.”*

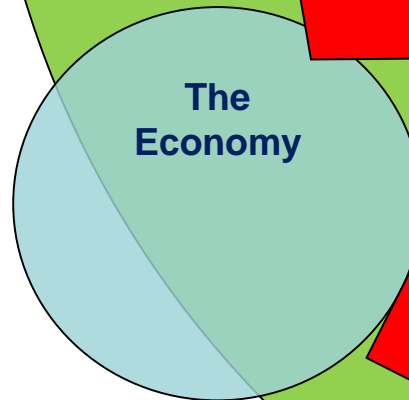
Stiglitz, J.E., A. Sen, and J-P. Fitoussi, (2009), Report by the Commission on the Measurement of Economic Performance and Social Progress, p.7  
[www.stiglitz-sen-fitoussi.fr/documents/rapport\\_anglais.pdf](http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf)

# The Economy and The Environment

Stocks

Flows

Expenditures



-Natural Resources  
-Ecosystem Services

-Residuals

# Integrating the Environment and the Economy at Statistics Canada

1970s	Structural Analysis Division
1978	First edition of <i>Human Activity and the Environment</i>
1989	<i>Waste Management Industry Survey</i>
1994	<i>Survey of Environmental Protection Expenditures</i>
1995	<i>Environment Industry Survey</i>
1997	<i>Canadian System of Environment and Resource Accounts (CSERA)</i>
2003	<i>Environment and Sustainable Development Indicators</i>
2005	<i>Agricultural Water Use Survey</i>
2007	<i>Survey of Industrial Water Use</i>
2009	<i>Survey of Drinking water Treatment Plants</i>
2013	<i>Measuring Ecosystem Goods and Services project results published in Human Activity and the Environment</i>

# SNA view

	Industries	Final demand	Assets
Sectors			Financial and produced assets, opening balance
Commodities	Industrial output of goods and services		
	Industrial intermediate demand	Final demand	Gross fixed capital formation
Wastes			
Sectors			Other changes in volume & holding gains/losses on financial & produced assets
			Financial and produced assets, closing balance

# System of Environmental-Economic Accounts (SEEA) view

	Industries	Final demand	Assets		
Sectors			Financial and produced assets, opening balance	Natural resource assets, opening balance	Natural resource assets, opening balance
Commodities	Industrial output of goods and services				
	Industrial intermediate demand Environmental protection expenditures	Final demand Environmental protection expenditures	Gross fixed capital formation Capital expenditures for environmental protection		
	Resource production by industries Resource use by industries	Resource production by households/gov't Resource use by households/gov't			
Wastes	Waste consumption by industries Waste output by industries	Waste consumption by households/gov't Waste output by households/gov't			
Sectors			Other changes in volume & holding gains/losses on financial & produced assets	Changes in and holding gains/losses on natural resource assets	Changes in natural resource assets
			Financial and produced assets, closing balance	Natural resource assets, closing balance	Natural resource assets, closing balance

# Physical Flow Accounting

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Table 153-0032<sup>1, 2, 3</sup>

Energy use, by sector

annual (terajoules)

Data table

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Geography = Canada

Sector	2004	2005	2006	2007	2008
Total, all sectors	10,498,742	10,470,903	10,226,701	10,840,945	10,612,484
Business sector	7,658,424	7,632,322	7,442,237	7,851,631	7,649,385
Crop and animal production	177,363	169,023	162,585	177,368	174,849
Forestry and logging	41,144	44,839	38,362	31,051	30,369
Fishing, hunting and trapping	16,950	13,492	11,351	11,196	11,118
Support activities for agriculture and forestry	13,468	15,955	14,049	15,295	15,837
Oil and gas extraction	1,074,476	1,112,942	1,052,099	1,104,403	1,096,012
Coal mining	17,916	14,919	12,498	14,162	17,921
Metal ore mining	70,269	74,533	74,584	70,172	82,056
Non-metallic mineral mining and quarrying	55,270	53,045	58,387	58,604	58,858
Support activities for mining and oil and gas extraction	54,195	61,830	68,896	63,791	61,170
Electric power generation, transmission and distribution	1,611,069	1,623,420	1,515,911	1,666,580	1,657,178




# Asset Accounting



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Table 378-0005<sup>3</sup>

Natural resource assets and produced assets

annual (dollars x 1,000,000)

Data table

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Geography = Canada

Categories	2008	2009	2010	2011	2012
Non-financial assets	7,416,200	6,629,425	7,313,829	7,960,934	8,041,096
Produced non-financial assets	4,187,815	4,246,166	4,408,493	4,639,292	4,895,157
Residential structures	1,654,058	1,687,356	1,778,316	1,871,006	1,980,938
Non-residential structures	1,319,709	1,328,319	1,393,163	1,489,886	1,588,777
Machinery and equipment	311,551	324,913	304,853	307,726	325,358
Consumer durable goods	465,860	476,435	495,912	513,720	525,196
Inventories	244,505	233,382	236,050	249,915	259,899
Non-produced non-financial assets	3,228,385	2,383,259	2,905,336	3,321,642	3,145,939
Land	1,805,153	1,931,790	2,037,456	2,202,114	2,360,816
Timber	131,789	71,567	122,276	120,499	113,133
Subsoil resource stocks	1,291,443	379,902	745,604	999,029	671,990
Selected energy resources <sup>1</sup>	987,017	256,900	516,642	679,642	441,628
Selected mineral resources <sup>2</sup>	304,426	123,002	228,962	319,387	230,362



# Accounting for Environmental Transactions (Expenditures)



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**Table 153-0052** <sup>1, 2</sup>

**Capital and operating expenditures on environmental protection, by North American Industry Classification System (NAICS) and type of activity, Canada**

every 2 years (dollars x 1,000,000)

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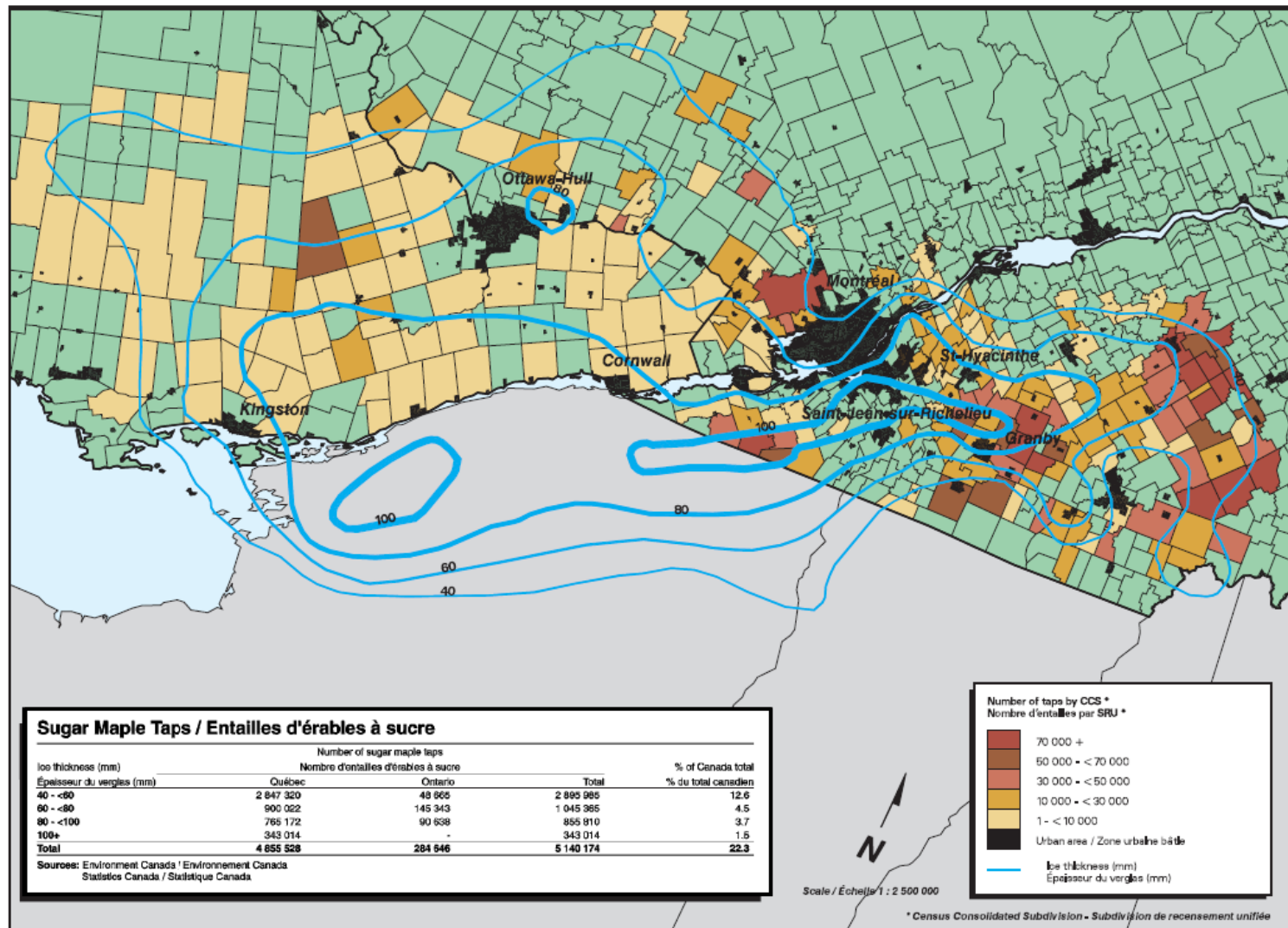
**Geography** = Canada <sup>3</sup>

**North American Industry Classification System (NAICS)** = Total, all industries <sup>4</sup>

Expenditures	Type of activity	2006	2008	2010
Capital expenditures <sup>4</sup>	Total, all activities	3,909.5 <sup>f</sup>	3,789.9 <sup>f</sup>	4,175.4
	Environmental monitoring	174.2 <sup>f</sup>	44.2 <sup>f</sup>	55.4
	Environmental assessments and audits	142.3 <sup>f</sup>	105.5 <sup>f</sup>	198.8
	Reclamation and decommissioning	429.1 <sup>f</sup>	496.6 <sup>f</sup>	608.3
	Wildlife and habitat protection	156.8 <sup>f</sup>	90.3 <sup>f</sup>	178.8
	Waste management and sewerage services	523.6 <sup>f</sup>	396.4 <sup>f</sup>	534.9
	Pollution abatement and control processes (end-of-pipe)	916.5 <sup>f</sup>	1,640.2 <sup>f</sup>	1,464.3
	Pollution prevention processes	1,566.9 <sup>f</sup>	964.7 <sup>f</sup>	1,070.9
	Other types of environmental protection <sup>4</sup>	..	52.1 <sup>f</sup>	63.9
	Total, all activities	4,851.2 <sup>f</sup>	4,943.0 <sup>f</sup>	5,346.8
	Environmental monitoring	245.8 <sup>f</sup>	213.5 <sup>f</sup>	249.1

# Sugar Maple Taps

# Entailles d'érables à sucre



# Environment Accounts Product Catalogue

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# The Green Plan

## Initiation

1990 Federal Budget

## Objectives

To initiate development of a system of environmental and resource accounts that would quantify the links between the environment and the economy.

## Outcome

*Canadian System of Environmental and Resource Accounts*

**Accounts:** Physical Flows (water, energy, GHG)

Assets (minerals, energy, timber), Land

Related indicators

**Surveys:** Environmental Protection Expenditures,  
Environmental Goods and Services

# Environment and Sustainable Development Indicators

## Initiation

2000 Federal Budget

## Objectives

To find ways to track the impact of current economic practices on the natural and human assets that will be needed by future generations of Canadians.

## Outcome

**Reports:** *2003 State of the Debate Report, 2006-08 Canadian Environmental Sustainability Indicators*

**Indicators:** *Air Quality, Water Quality, GHG Emissions*

**Surveys:** *Households and the Environment, Industrial Water Use, Agricultural Water Use, Drinking Water Treatment Plants*

**Links:** Ongoing contribution to Federal Sustainable Development Strategy indicators



# Measuring Ecosystem Goods and Services

## Initiation

2011 Interdepartmental funding request

## Objectives

To develop experimental ecosystem accounts with the specific objective of supporting policy needs related to the valuation of ecosystem goods and services.

## Outcome

**Reports:** *Human Activity and the Environment 2013: Measuring ecosystem goods and services in Canada*

**Infrastructure:** MEGS geospatial database, MEGS community of practice

# Questions?

## Joe St. Lawrence

**Environment Accounts and Statistics | Comptes et statistique de l'environnement**  
**R.H. Coats Building | Immeuble R.-H.-Coats / Floor | Étage 25 M**  
**Statistics Canada | 100 Tunney's Pasture Driveway, Ottawa ON K1A 0T6**  
**Statistique Canada | 100, promenade Tunney's Pasture, Ottawa ON K1A 0T6**  
**Joe.St.Lawrence@statcan.gc.ca**  
**Telephone | Téléphone 613-951-7709**  
**Facsimile | Télécopieur 613-951-0634**  
**Government of Canada | Gouvernement du Canada**