

Sustainability

History: Awareness

- **1970-73:**
 - Club of Rome: Limits to Growth (D. Meadows)
 - Stockholm meeting on the Environment
 - First energy crisis due to oil embargo
 - Intermediate Technology: Small is Beautiful
 - First warnings about Ozone hole and CFCs
 - Air and Water pollution concerns
 - Environment and Resource Studies founded
- **1973: Science Council of Canada Report # 19: Conserver Society idea suggested**
- **1975: The Limits to Growth: A Review of World Reaction (G. Winstanley, EMR)**

History: Response

- **1976: Towards A Conserver Society (Science Council) and GAMMA Report**
- **1977: Canada as a Conserver Society (SC # 27)**
- **1980: Global 2000 Study (J. Carter, G. Speth)**
- **1980-85 The Reagan Years**
- **1987: Bruntland Commission: Sustainable Development**
- **1989-90: The Greenprint, The Greenplan etc.**

History: Environment (90s)

Here to Stay?

- **Global Climate Change, Ozone hole, famine, AIDS and other "new" diseases, water crisis**
- **Rio Conference, multiple international agreements: Agenda 21, CFCs, etc.**
- **Local initiatives, International Council for Local Environmental Initiatives etc.**
- **After 1993, multiple environmental education programmes.**
- **The emergence of *Ecological Economics* and *Ecosystem Approach* and *Sustainable Livelihoods***

A Conserver Society

An Overview

(circa 1977)

- **Concern for the future**
- **Economy of design**
- **Diversity, Flexibility, Responsibility and Decentralization**
- **Recognition of total costs**
- **Respect for the regenerative capacity of the biosphere**
- **Three transitional phases: CS1, CS2 ,CS3**

Conservor Society

CS1: Doing More with Less

- **Growth with non-waste industry**
- **Key Characteristics:**
 - Industrial growth is assumed as is economic growth
 - Maximum efficiency enables reduced resource use
 - Wasteful practices are minimized
 - Waste production is greatly reduced
- **Goal: Efficiency**
- **Values: Industrial achievement, balanced growth, machines, high impact technology, material possessions, jobs, leisure, salary, titles**

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CS1: Doing More with Less

- **Strategies for Achieving:**
 - Full cost pricing
 - Government regulation
 - Technological research and development to minimize inputs, to make recycling feasible and to promote use of renewable forms of energy
 - Rental of little uses items to supplement private ownership
 - Seek small behavioural changes in consumers

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CS2: Doing the Same with Less

- **A stable-state industrial society**
- **Key Characteristics:**
 - Zero growth in industrial output
 - Throughput stabilized at a chosen level
 - Priorities shifted to accommodate decisions on what should be produced and which resources should be conserved
 - Reduced effect of income inequality
 - Optimum city size determined and physical growth halted
 - Zero population growth

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CS2: Doing the Same with Less

- **Goal: Stability at a selected level**
- **Values: Technology, machines, material possessions, jobs, leisure, salary, titles, appropriate consumption**

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CS2: Doing the Same with Less

- **Strategies for Achieving:**
 - Progressive income tax, with income set (maximum and minimum incomes)
 - Abolition of need creation
 - Even-handed advertising
 - Phasing in ways of providing satisfaction with low throughput
 - De-marketing
 - Decentralizing government and educational facilities
 - Development of new towns
 - Development of transportation networks

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CS3: Doing Less with Less

- **A people-focused society**
- **Key Characteristics:**
 - Satisfaction of true needs by freezing creation of wants
 - Small scale activities and institutions
 - Minimum throughput- an economy of stock
 - Sustainable economy over a indefinite period
 - Stable population
 - Optimal development of human resources

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CS3: Doing Less with Less

- **Goal: Satisfaction of individual needs without excessive consumption or environmental disruption**
- **Values:**
 - Social harmony (peace and co-operation), democracy;
 - participatory decision making;
 - diversity, family, and community;
 - the individual as a responsible, creative, and autonomous being;
 - tools; work; creativity; skills; future

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CS3: Doing Less with Less

- **Strategies for Achieving:**
 - **Retreat from industrialization**
 - **Decentralization of all activity- political and economic**
 - **Nonmaterial routes to achieving happiness (enjoyment, learning, participation).**
 - **Conservation of energy and non-renewable materials**
 - **Reducing disruption of natural systems**
 - **Communication supplants transportation**
 - **Self-employment encouraged**
 - **Taxes to promote scale reductions and use of renewable resources**
 - **Organic agricultural methods**
 - **Public regulation where needs warrant**

What are the characteristics of a sustainable society?

- **RENEWABLE RESOURCES (including waste assimilation)**

Resources regenerate at a finite rate.

A sustainable society consumes resources for operation at rates that are less than regeneration rates. (i.e. it depends on renewable resources)

New exergy is available at a fixed rate.

A sustainable society consumes exergy for operation at a rate that is less than the rate at which it captures new exergy.

What are the characteristics of a sustainable society?

- **Ecological-Economic Systems**

Human constructed ecosystems (i.e. economies) depend on the biosphere for life support.

Human interactions with ecosystems are such that the integrity of the ecosystems is maintained. The integrity of ecosystems is necessary for the continued functioning of the life support systems necessary for human life on this planet.

- **Population Steady State**

Equity and Sustainable livelihoods are required for sustainability.

What is sustainability about.....

- **Keeping my ecological footprint down.**
- **Maintaining the ecological integrity of the biosphere.**
- **Keeping the population at a sustainable size.**

In Canada....

- **Use available techniques (including technology) combined with life cycle and quality analysis to improve efficiency and decrease footprint.**
- **Work to make new options available to people through structural change, new products and technology.**
- **Work on equity.**
- **Maintain ecological integrity.**
- **Continue transition to CS1, CS 2, and CS3.**

**Does this all matter? Does efficiency matter?
Will decreasing our ecological footprint help?**

Problem: The rest of the planet wants to be American middle class yesterday! (The Baywatch vision....)

Population **size** is the problem.

Reducing poverty, reduces reproduction, reduces population.

People must have a **livelihood** which is **sustainable**.

UNDP *Sustainable livelihoods* programme.