

# Concepts and Principles<sup>1</sup>

## Advancing towards sustainable development through research and innovation

The Brundtland Commission report, *Our Common Future*, brought forth the concept of *sustainable* development as a critical and urgent innovation in governance. Sustainable development emphasized the dynamic linkages among human well-being, economic development and environmental underpinnings, with emphasis on the following:

**Intra- and inter-generational linkages** Development that meets the needs of the present, without compromising the ability of future generations to meet their own needs.

**Inter-dependence** Development that takes account of the inherent connections among our environment, the people living in it, and the economy within which we interact on a daily basis; and

**Multi-stakeholder perspectives** Development that relies on the multiple perspectives of broad participation to adequately understand the complexity of issues and to attain the legitimacy necessary to implement initiatives that advance development.

**Multi-scale effects** Understanding the inter-relationships between scales for issues and policy responses.

**Inherent capacities** Understanding and appreciating the thresholds that exist within our inter-related socio-economic and environmental systems.

**Adaptive learning and management** The need for continuous cycles of planning, implementation and adjustment due to the inherent complexity and uncertainty in environment-development processes.

---

<sup>1</sup> <http://www.iisd.org/measure/principles/>

## Education and the Environment Initiative<sup>2</sup>

Assembly Bill 1548 (Pavley, Chapter 665, Statutes of 2003)

### Environmental Principles and Concepts

The environmental principles examine the interactions and interdependence of human societies and natural systems. The nature of these interactions is summarized in the environmental principles and concepts that are presented below.

#### Principle I

The continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystem services. As a basis for understanding this principle:

**Concept a.** Students need to know that the goods produced by natural systems are essential to human life and to the functioning of our economies and cultures.

**Concept b.** Students need to know that the ecosystem services provided by natural systems are essential to human life and to the functioning of our economies and cultures.

**Concept c.** Students need to know that the quality, quantity and reliability of the goods and ecosystem services provided by natural systems are directly affected by the health of those systems.

#### Principle II

The long-term functioning and health of terrestrial, freshwater, coastal and marine ecosystems are influenced by their relationships with human societies. As a basis for understanding this principle:

**Concept a.** Students need to know that direct and indirect changes to natural systems due to the growth of human populations and their consumption rates influence the geographic extent, composition, biological diversity, and viability of natural systems.

**Concept b.** Students need to know that methods used to extract, harvest, transport and consume natural resources influence the geographic extent, composition, biological diversity, and viability of natural systems.

**Concept c.** Students need to know that the expansion and operation of human communities influences the geographic extent, composition, biological diversity, and viability of natural systems.

**Concept d.** Students need to know that the legal, economic and political systems that govern the use and management of natural systems directly influence the geographic extent, composition, biological diversity, and viability of natural systems.

#### Principle III

Natural systems proceed through cycles that humans depend upon, benefit from and can alter. As a basis for understanding this principle:

**Concept a.** Students need to know that natural systems proceed through cycles and processes that are required for their functioning.

**Concept b.** Students need to know that human practices depend upon and benefit from the cycles and processes that operate within natural systems.

**Concept c.** Students need to know that human practices can alter the cycles and processes that operate within natural systems.

#### Principle IV

The exchange of matter between natural systems and human societies affects the long-term functioning of both. As a basis for understanding this principle:

**Concept a.** Students need to know that the effects of human activities on natural systems are directly related to the quantities of resources consumed and to the quantity and characteristics of the resulting byproducts.

**Concept b.** Students need to know that the byproducts of human activity are not readily prevented from entering natural systems and may be beneficial, neutral, or detrimental in their effect.

**Concept c.** Students need to know that the capacity of natural systems to adjust to human-caused alterations depends on the nature of the system as well as the scope, scale, and duration of the activity and the nature of its byproducts.

#### Principle V

Decisions affecting resources and natural systems are based on a wide range of considerations and decision-making processes. As a basis for understanding this principle:

**Concept a.** Students need to know the spectrum of what is considered in making decisions about resources and natural systems and how those factors influence decisions.

**Concept b.** Students need to know the process of making decisions about resources and natural systems, and how the assessment of social, economic, political, and environmental factors has changed over time.

---

<sup>2</sup> <http://www.calepa.ca.gov/Education/Principles/EPC.pdf>

# National Goals Towards Sustainable Development<sup>3</sup>

The Council first published these goals in its 1996 report, Sustainable America. They emerged from our vision and still express the Council's shared aspirations. They are truly interdependent and flow from our understanding that it is essential to seek economic prosperity, environmental protection, and social equity together. The achievement of any one goal is not enough to ensure that future generations will have at least the same opportunities to live and prosper that this generation enjoys: all are needed.

## **GOAL 1: HEALTH AND THE ENVIRONMENT**

Ensure that every person enjoys the benefits of clean air, clean water, and a healthy environment at home, at work, and at play.

## **GOAL 2: ECONOMIC PROSPERITY**

Sustain a healthy U.S. economy that grows sufficiently to create meaningful jobs, reduce poverty, and provide the opportunity for a high quality of life for all in an increasingly competitive world.

## **GOAL 3: EQUITY**

Ensure that all Americans are afforded justice and have the opportunity to achieve economic, environmental, and social well-being.

## **GOAL 4: CONSERVATION OF NATURE**

Use, conserve, protect, and restore natural resources ó land, air, water, and biodiversity ó in ways that help ensure long-term social, economic, and environmental benefits for ourselves and future generations.

## **GOAL 5: STEWARDSHIP**

Create a widely held ethic of stewardship that strongly encourages individuals, institutions, and corporations to take full responsibility for the economic, environmental, and social consequences of their actions.

## **GOAL 6: SUSTAINABLE COMMUNITIES**

Encourage people to work together to create healthy communities where natural and historic resources are preserved, jobs are available, sprawl is contained, neighborhoods are secure, education is lifelong, transportation and health care are accessible, and all citizens have opportunities to improve the quality of their lives.

## **GOAL 7: CIVIC ENGAGEMENT**

Create full opportunity for citizens, businesses, and communities to participate in and influence the natural resource, environmental, and economic decisions that affect them.

## **GOAL 8: POPULATION**

Move toward stabilization of U.S. population.

## **GOAL 9: INTERNATIONAL RESPONSIBILITY**

Take a leadership role in the development and implementation of global sustainable development policies, standards of conduct, and trade and foreign policies that further the achievement of sustainability.

## **GOAL 10: EDUCATION**

Ensure that all Americans have equal access to education and lifelong learning opportunities that will prepare them for meaningful work, a high quality of life, and an understanding of the concepts involved in sustainable development.

---

<sup>3</sup> Towards a Sustainable America, <http://clinton4.nara.gov/media/pdf/tsa.pdf>