

PART I - HUMANS AND SUSTAINABILITY: AN OVERVIEW

CH 1 -ENVIRONMENTAL PROBLEMS AND SOLUTIONS: AN INTRODUCTION AND OVERVIEW (modified by Gabi Morlin)

Summary

1. All life depends on energy from the Sun (solar capital) and the resources and ecological services of the Earth (natural capital) to survive. An environmentally sustainable society provides for the current needs of its people without undermining the ability of future generations to do the same.
2. Living sustainably means living off natural income that can be replenished. Degrading the Earth's natural capital is the same as living off an investment's capital, rather than just the interest.
3. The world's population is growing about 1.2% per year, which adds about 80 million people per year. Economic growth increases a country's capacity to provide goods and services to its people. Economic development uses economic growth to improve standards of living. Globalization is a process of increasingly interconnecting people through social, economic, and environmental global changes. There are many benefits and drawbacks to the increase in global economic development.
4. Developed countries are highly industrialized, have a high average per capita GDP, use most of the world's resources, and produce most of the world's pollution and waste. About 5.6 billion people live in developing countries with low incomes and high population growth rates.
5. The Earth's main resources are perpetual resources like solar energy, renewable resources like forests and fresh water, and nonrenewable resources like oil and gas. The resources can be depleted or degraded by overuse, waste, pollution, and humanity's increasing "ecological footprint."
6. A sustainable yield is one that can be used indefinitely without limiting future supplies. Environmental degradation occurs when the natural replacement rate of a renewable resource is exceeded. In the tragedy of the commons, common property is overused, and no one individual takes responsibility for the resulting environmental degradation.
7. The principle types of pollution are air, water, soil, and food pollutants. Pollution prevention is preferable to cleaning up pollution because the latter often causes additional pollutants in another part of the environment.
8. The basic causes of today's environmental problems are population growth, wasteful use of resources, the tragedy of the commons, poverty, poor environmental accounting, and ecological ignorance. These problems are interconnected because of political and economic practices that are not equitable for various populations, in resource consumption and in technological applications.

9. Environmentally sustainable development encourages environmentally beneficial forms of economic growth and discourages environmentally harmful growth.
10. There is currently an enormous array of solutions to environmental issues. These solutions take place at many levels: individual grass roots, environmental agencies, and political agendas. There have been many meetings of world leaders. The science behind environmental research is widespread and in great depth.
11. The reason for you to take this course, is to become aware of the environmental situation of the world, AND all the work that is going toward allaying various issues such as pollution, plastics and energy efficiency. Much of the knowledge you gain will be science knowledge, which is much needed to jump into the movement of solutions. You may become an inventor of a product – like the flashlight that is powered by hand heat. You may become a researcher in conservation – determining the amount of land required by caribou migrations for example. You may become involved at the NGO or government level. Any way you become involved..... is a good way.