Yakın Doğu Üniversitesi
Mimarlık Fakültesi
Peyzaj Mimarlığı Bölümü

NEAR EAST UNIVERSITY

PM 317 Human and Environment

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Environmental Definitions

Ecologists: biological scientists studying the relationships between living organisms and their environment

Environmentalist: broadly supports the goals of the environmental movement, "a political and ethical movement that seeks to improve and protect the quality of the natural environment through changes to environmentally harmful human activities“.

Environmental Definitions

Environmental Scientists: use information from the natural sciences and social sciences

- to understand how the Earth works
- learn how people interact with the Earth
- to find solutions to environmental problems

Environmental Definitions

• **Nature Conservationists:** deal with the use of natural areas and wildlife in a way to ensure their preservation for present and future generations of humans and other life forms

Lecture Overview

What are natural resources and why are they important?

What keeps us alive?

What keeps us alive?

Our existence, our way of life and our economy in general depend on the sun and the earth.

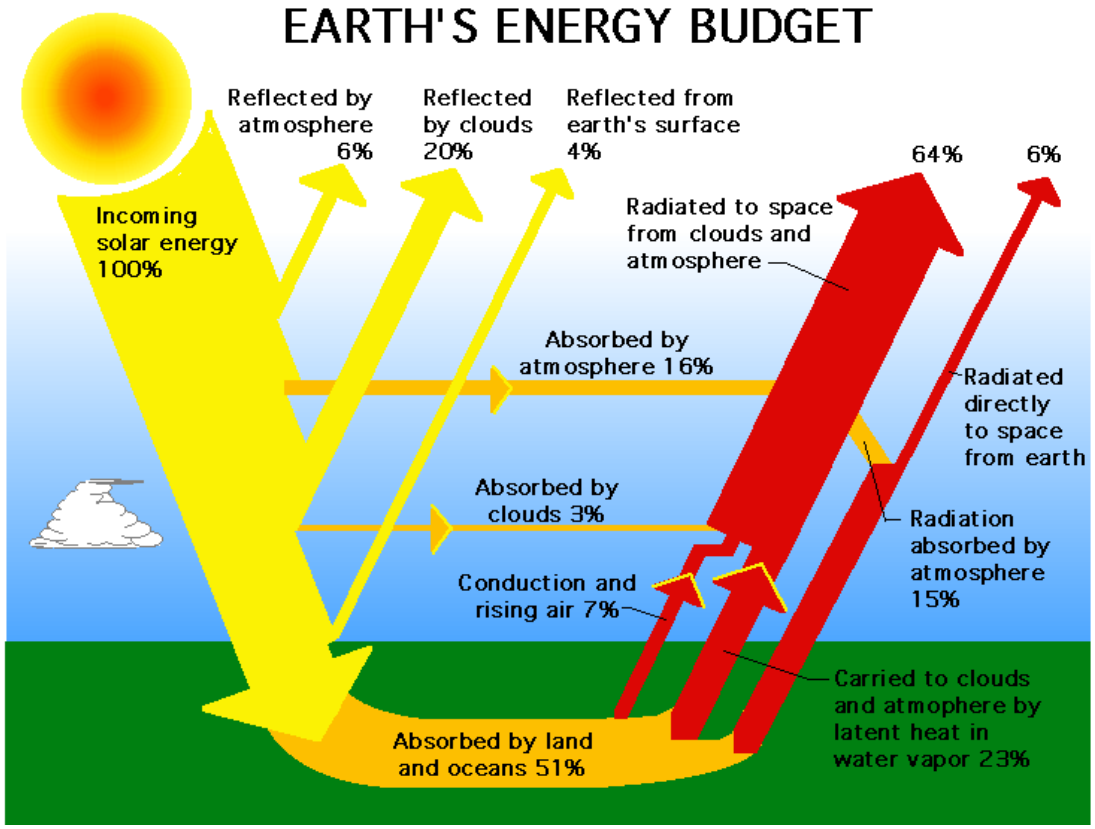
What keeps us alive?

Economics: Capital is wealth that is used to maintain an enterprise and to produce more wealth.

An enterprise is a business or a company.

What keeps us alive?

Solar Capital: energy from the sun

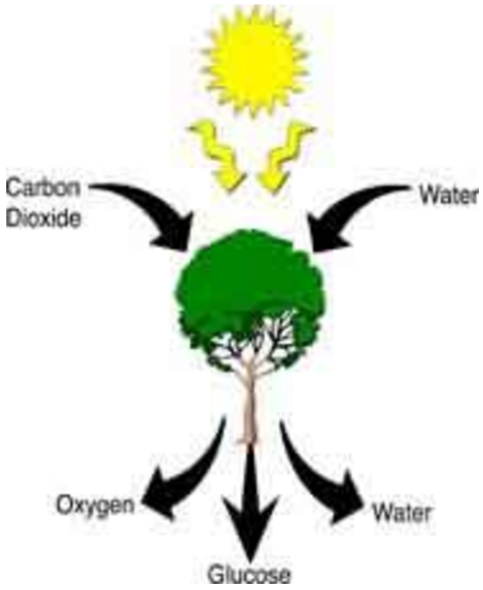


What keeps us alive?

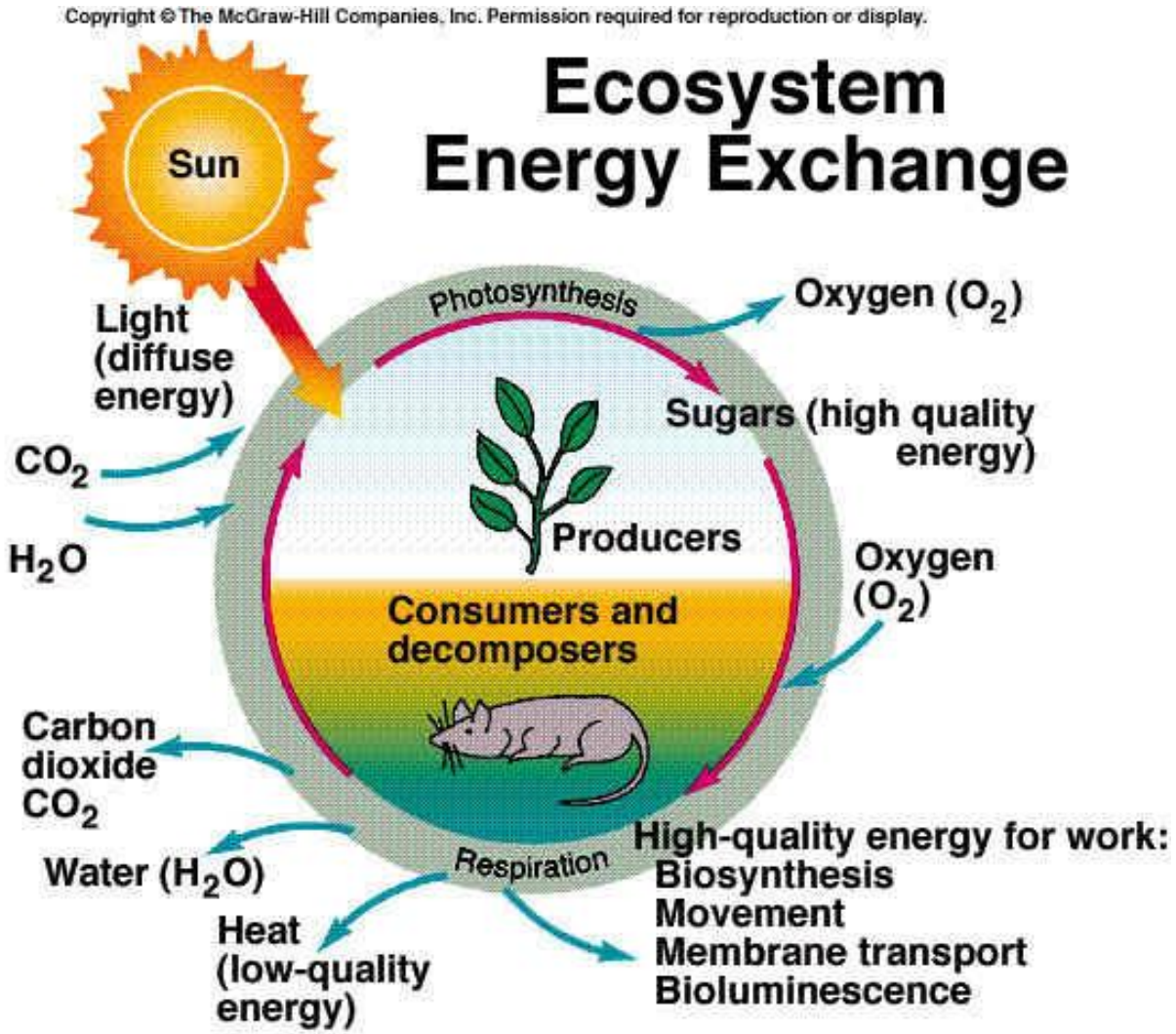
Energy Flow through an Ecosystem

•ALL life on Earth is dependent on energy flowing through an ecosystem.

•Energy begins its journey from the **SUN** as *light energy* and is converted to *chemical energy* by PLANTS. This transfer of energy is called photosynthesis.



What keeps us alive?



What keeps us alive?

Natural Capital: air, water, soil, wildlife, forests, fisheries of our planet

What keeps us alive?

Natural capital is the land, air, water, living organisms and all formations of the Earth's biosphere that provide us with **ecosystem goods** and **services** imperative for survival and well-being.

Furthermore, it is the basis for all human economic activity.

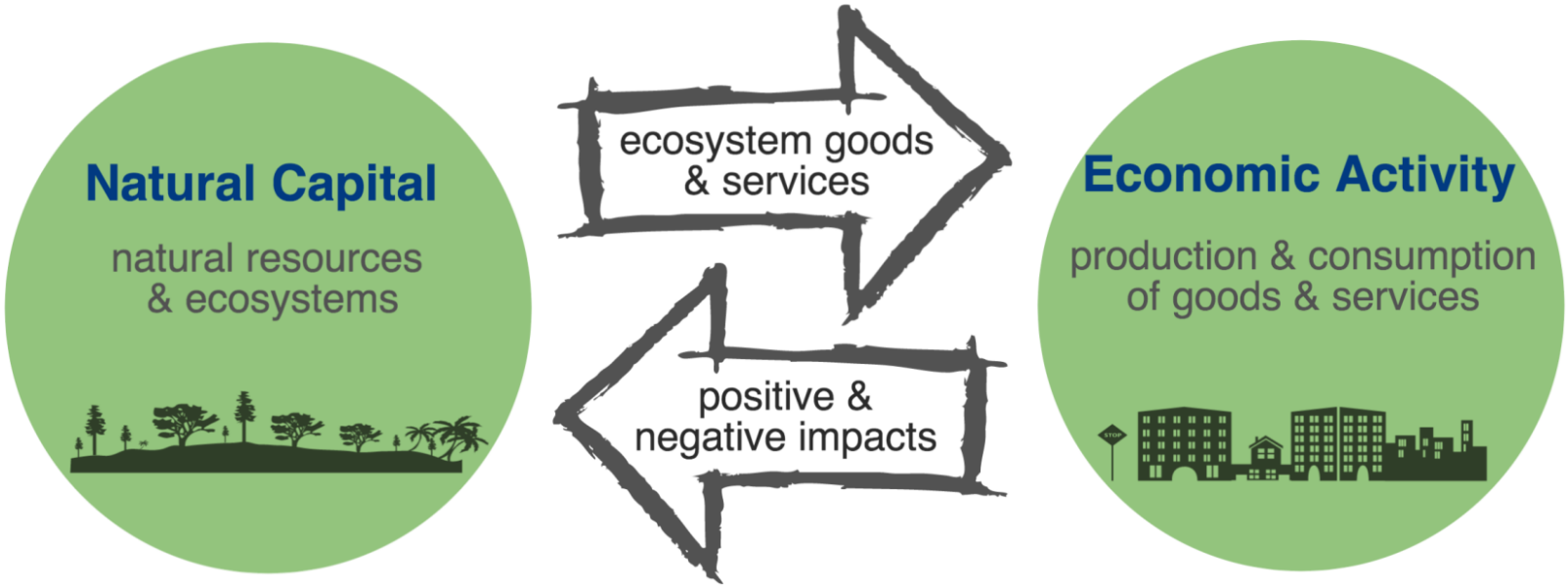
Ecosystem goods

Our physical, cultural, social and economic lives are dependent upon these ecological goods that include:

- Clean air.
- Fresh water.
- Food .
- Timber.
- Other raw building materials.
- Genetic resources.
- Medicines.

Why is Natural Capital Important?

Natural capital and economic activity are highly linked. . .



. . . if we extract too much from nature or cause environmental damage, we degrade our natural capital and put our economy at risk

SP | Sustainable Prosperity

Human Population Growth

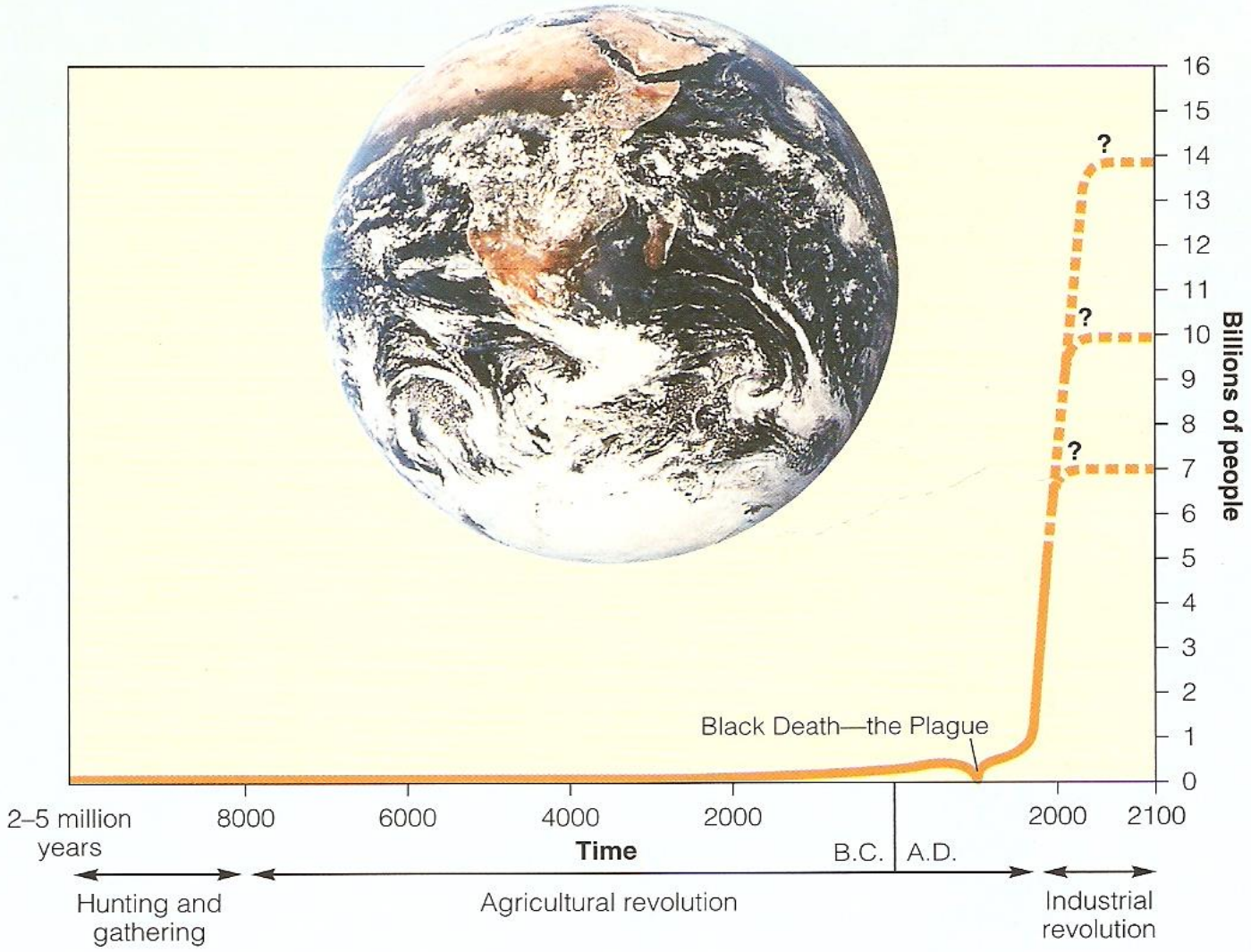


Figure 1-1 The *J*-shaped curve of past exponential world population growth, with projections to 2100. Notice that exponential growth starts off slowly, but as time passes the curve becomes increasingly steep. The current world population of 6.2 billion people is projected to reach 7–14 billion people sometime during this century. (This figure is not to scale.) (Data from World Bank and United Nations; photo courtesy of NASA)

Economic Growth

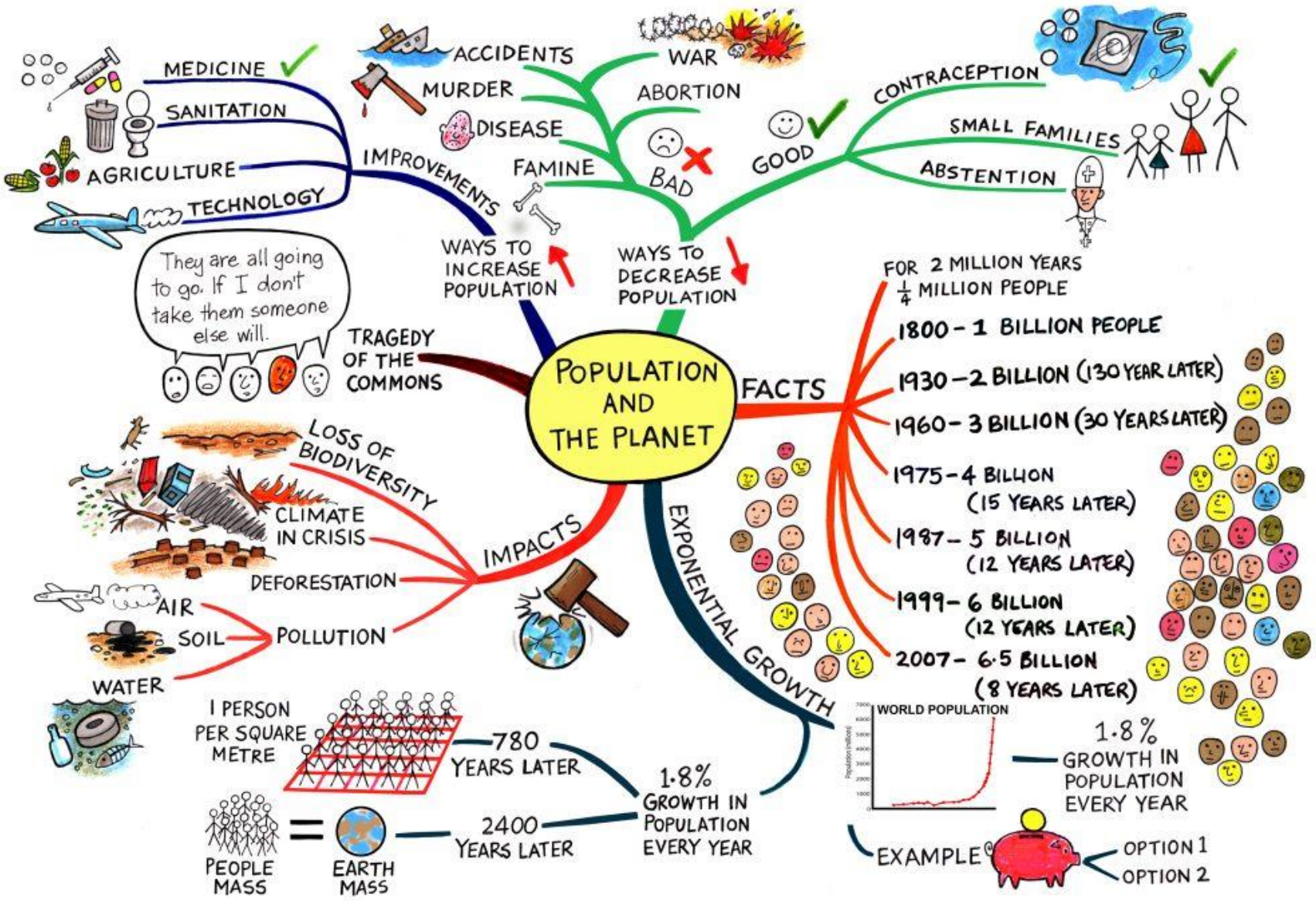
Definition: an increase in the productive capacity of a country to provide people with goods and services.

This increase is achieved by increasing the population (more consumers and producers).

Measurement of Economic Growth

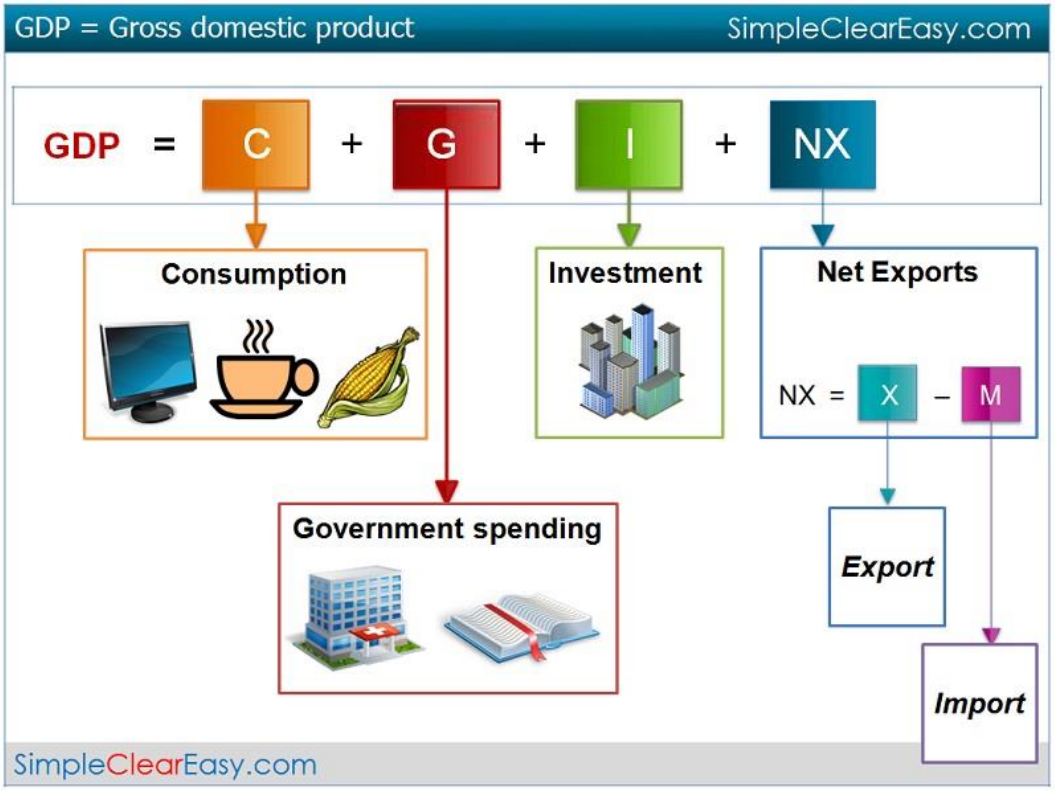
The economic development of a country is measured by the growth of several key indicators:

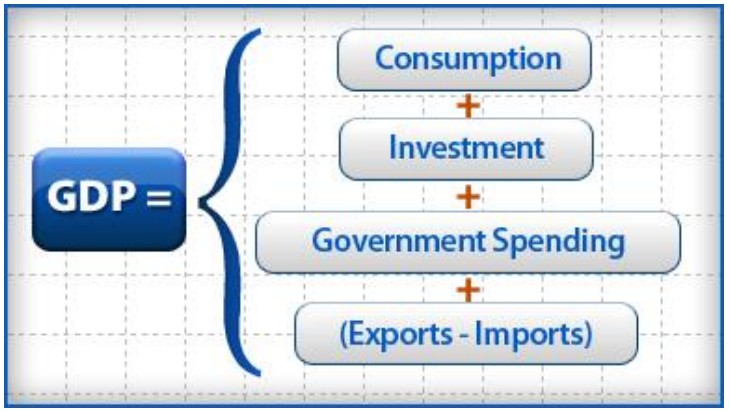
GNP (Gross National Product): market value in dollars of all goods (products) and services produced within and outside the country during one year, plus the net income earned abroad by citizens of that country


POPULATION AND THE PLANET
WAYS TO INCREASE POPULATION
MEDICINE
SANITATION
AGRICULTURE
TECHNOLOGY
IMPROVEMENTS
ACCIDENTS
MURDER
DISEASE
FAMINE
WAR
ABORTION
BAD
WAYS TO DECREASE POPULATION
GOOD
CONTRACEPTION
SMALL FAMILIES
ABSTENTION
They are all going to go. If I don't take them someone else will.
TRAGEDY OF THE COMMONS
FACTS
FOR 2 MILLION YEARS
¼ MILLION PEOPLE
1800 – 1 BILLION PEOPLE
1930 – 2 BILLION (130 YEAR LATER)
1960 – 3 BILLION (30 YEARS LATER)
1975 – 4 BILLION (15 YEARS LATER)
1987 – 5 BILLION (12 YEARS LATER)
1999 – 6 BILLION (12 YEARS LATER)
2007 – 6.5 BILLION (8 YEARS LATER)
IMPACTS
LOSS OF BIODIVERSITY
CLIMATE IN CRISIS
DEFORESTATION
AIR
SOIL
WATER
POLLUTION
EXPONENTIAL GROWTH
1 PERSON PER SQUARE METRE
780 YEARS LATER
PEOPLE MASS
=
EARTH MASS
2400 YEARS LATER
1.8% GROWTH IN POPULATION EVERY YEAR
WORLD POPULATION
1.8% GROWTH IN POPULATION EVERY YEAR
EXAMPLE
OPTION 1
OPTION 2

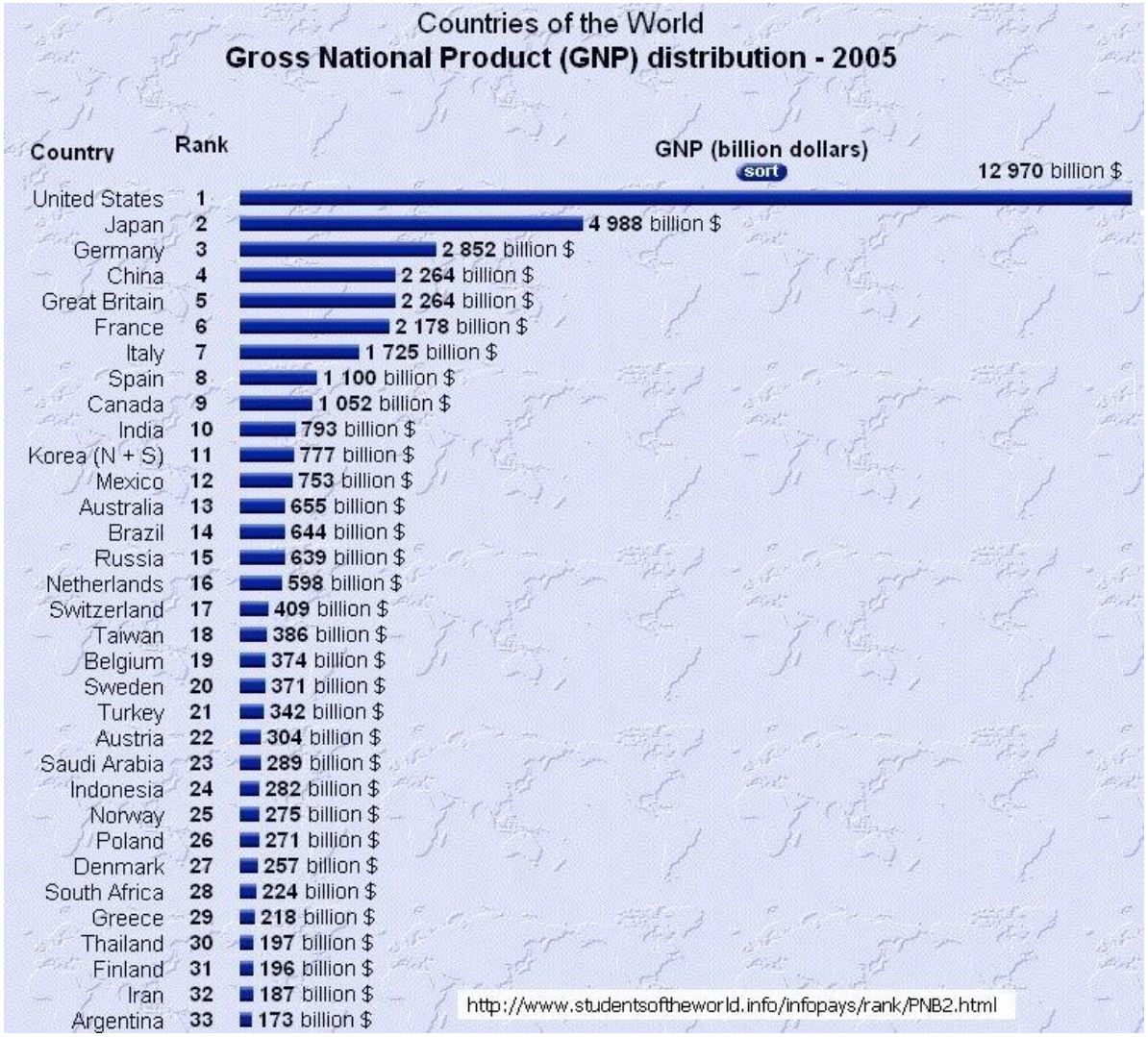
Measurement of Economic Growth

Gross Domestic Product: the market value in dollars of all goods (products) and services produced within a country during a year





- The most widely used measure of national income is **Gross Domestic Product**, or **GDP**, which is the market value of all
- final goods and services produced by a country in a year. GDP measures only the economic aspects of a country's welfare. It does not measure other factors that are important to overall well-being, such as social or environmental aspects.



Economic Development

Definition: the improvement of living standards as a result of economic growth.

The United Nations ranks countries in Developed and Developing.

Economic Development

Developed Countries: (population approximately 1.2 billion) US, Canada, Japan, Australia, New Zealand, and all the countries of Europe. Most are industrial and together make 19% of the population.

Developing Countries: (population about 5 billion) most countries in Africa, Asia, and Latin America.
Together make 89% of population

Economic Development

- Developed Countries:
- Have 85% of the wealth and income of the world
- They use about 88% of the natural resources of the world
- They produce 85% of waste and pollution in the world

Economic Development

- Developing Countries:

- They have 15% of the wealth and income of the world

- They use about 12% of the natural resources of the world

- They produce 15% of waste and pollution in the world

Economic Development

More than 95% of the projected increase in world population will occur in developing countries, where the population increases by 1 million every 5 days.

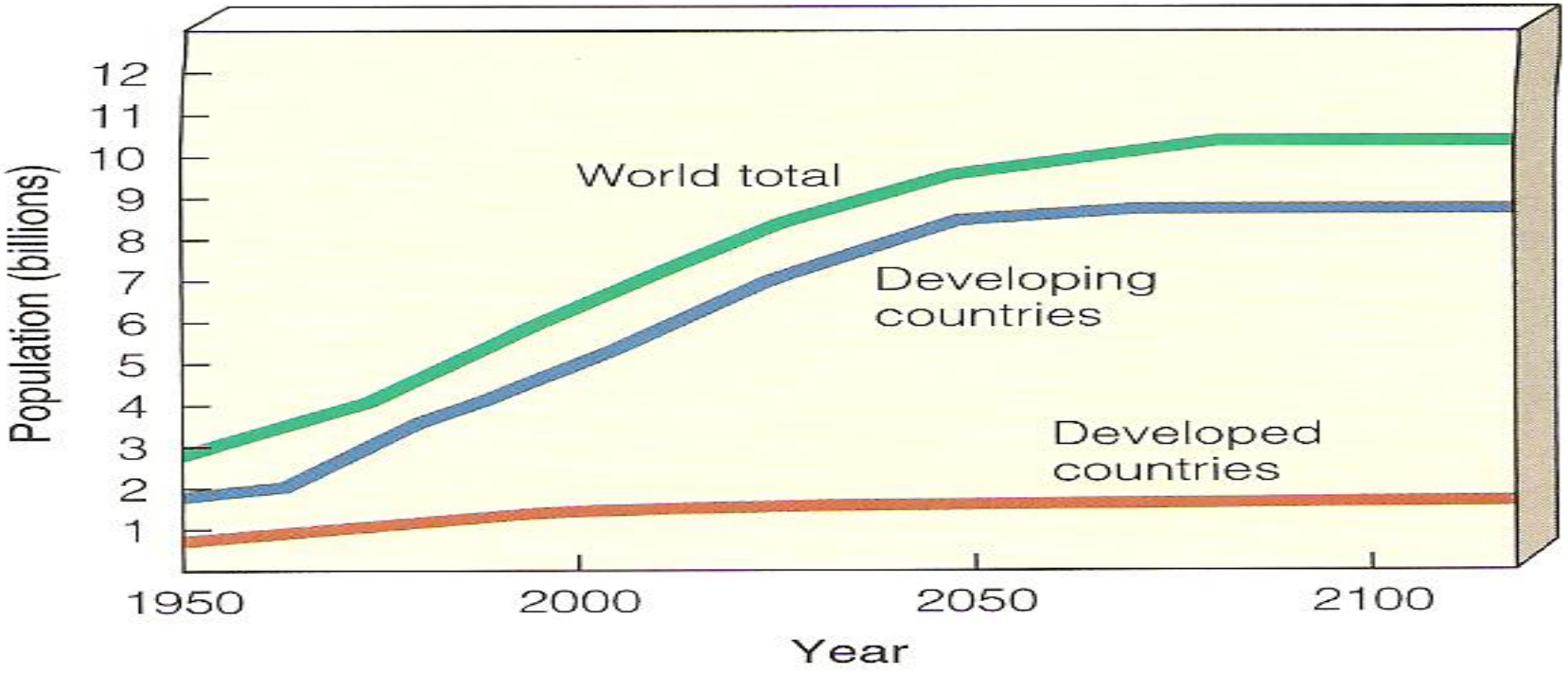


Figure 1-4 Past and projected population size for developed countries, developing countries, and the world, 1950–2120. More than 95% of the addition of 3.6 billion people between 1990 and 2030 is projected to occur in developing countries. (Data from United Nations)

Resources

Resource is something to be taken from the environment to meet human needs and wants.

Food, water, shelter, transport, etc.

Resources taken from the environment are classified as a perpetual, renewable and non-renewable

Resources

Enduring Resources: the resources are updated constantly.

E.g. Solar Energy.

It is expected to last at least six billion years, as the sun completes its life cycle.

Resources

Renewable Resources: are the resources that can be replenished quickly enough (from hours to several decades) with natural processes, if not depleted faster than they are replaced.

E.g. forests, fresh water, fertile soil

Resources

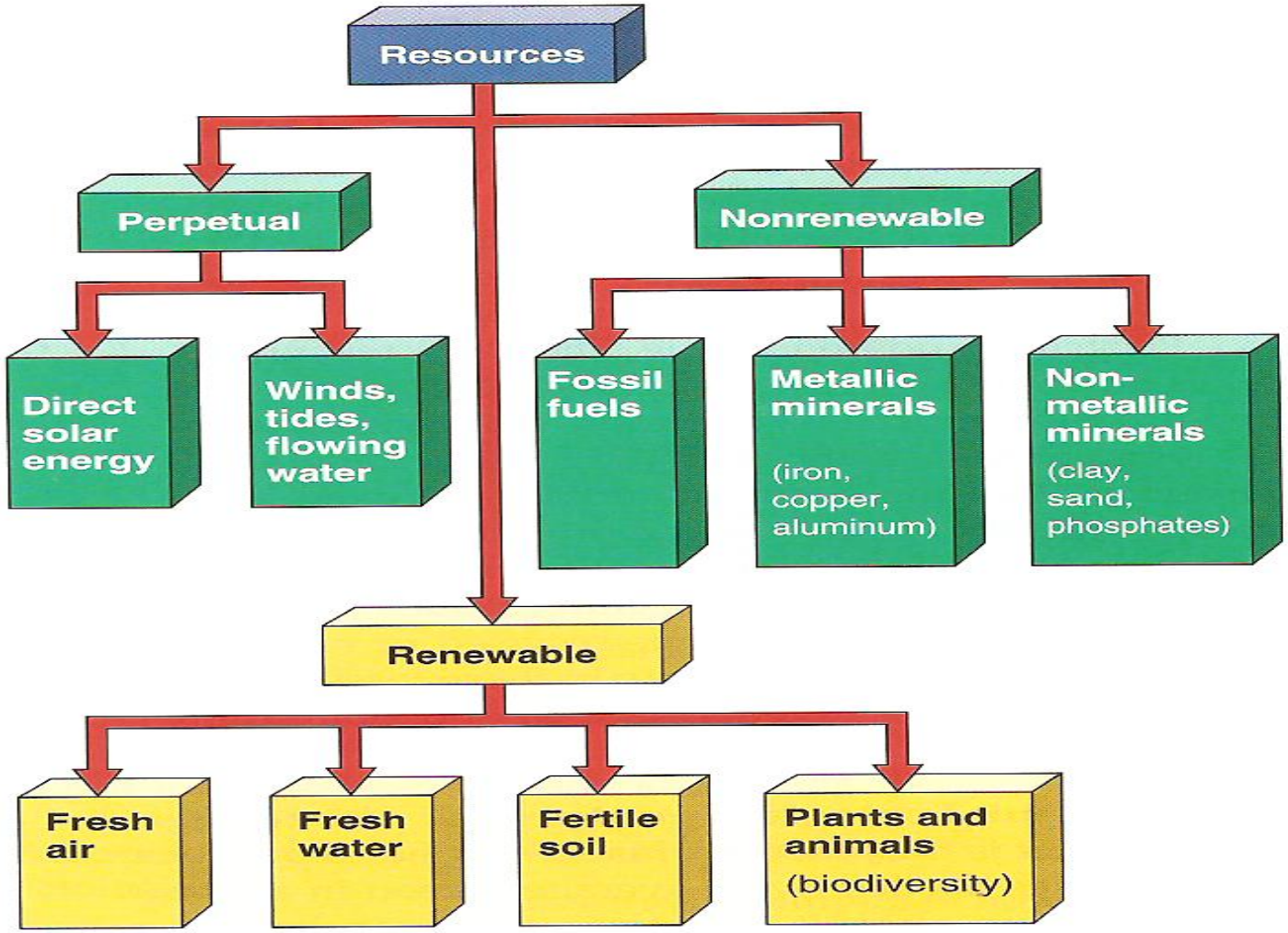


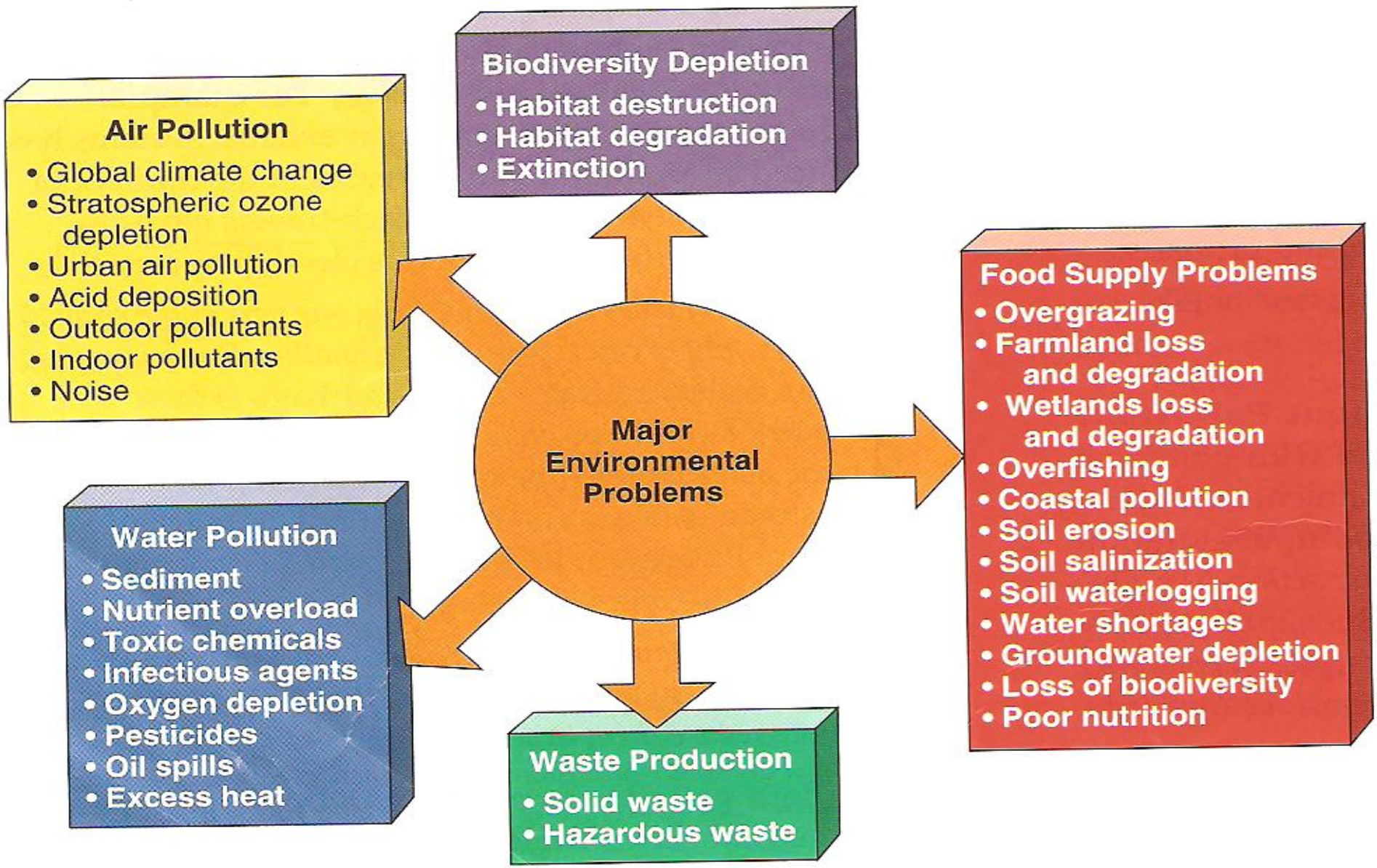
Figure 1-6 Major types of material resources. This scheme is not fixed; renewable resources can become nonrenewable if used for a prolonged period at a faster rate than they are renewed by natural processes.

Resources Management

5 R's

- *Refuse (do not use)*
- *Replace (find a less harmful substitute)*
- *Reduce (use less)*
- *Reuse*
- *Recycle*

Environmental Issues



How these issues are linked

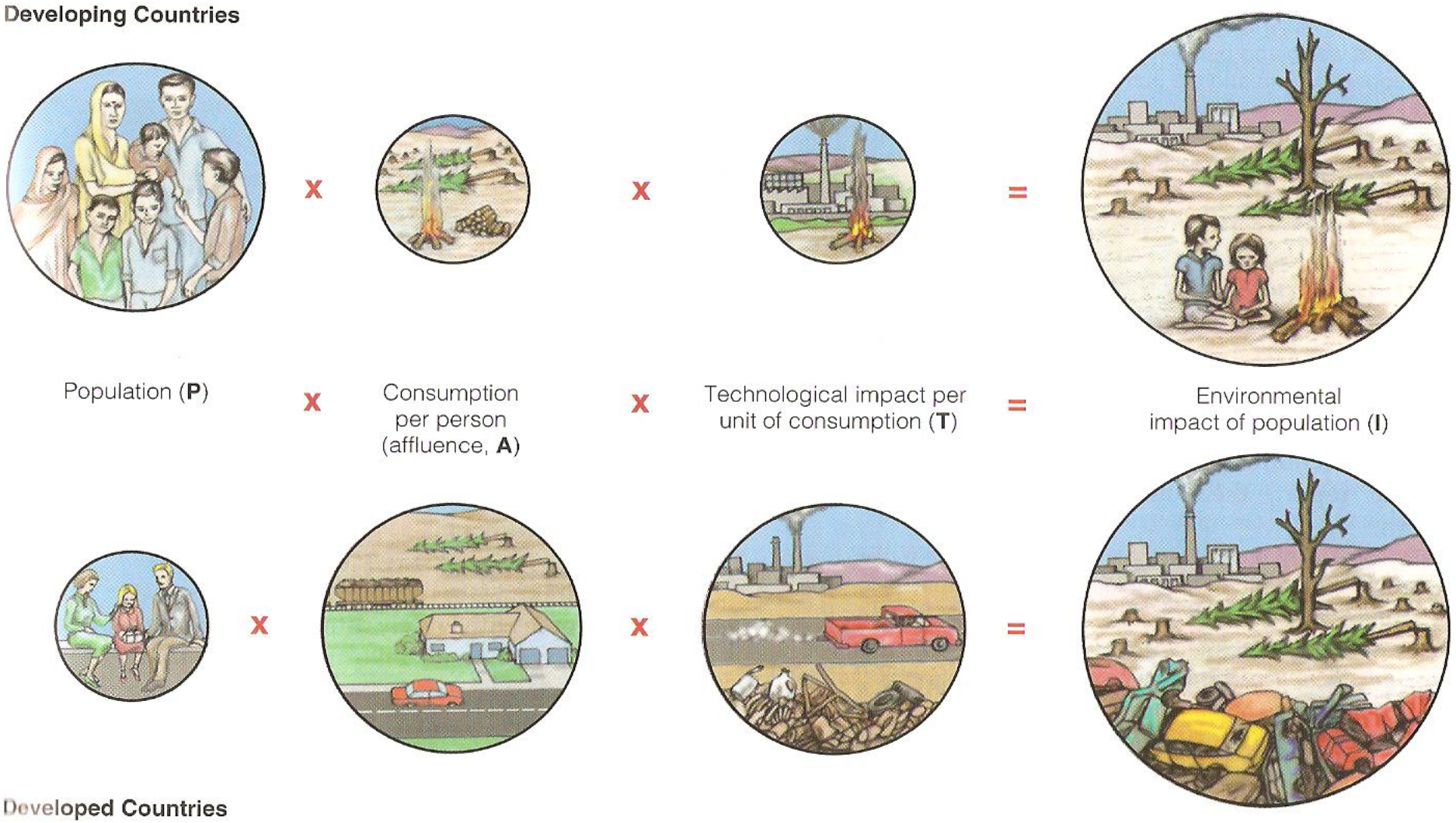
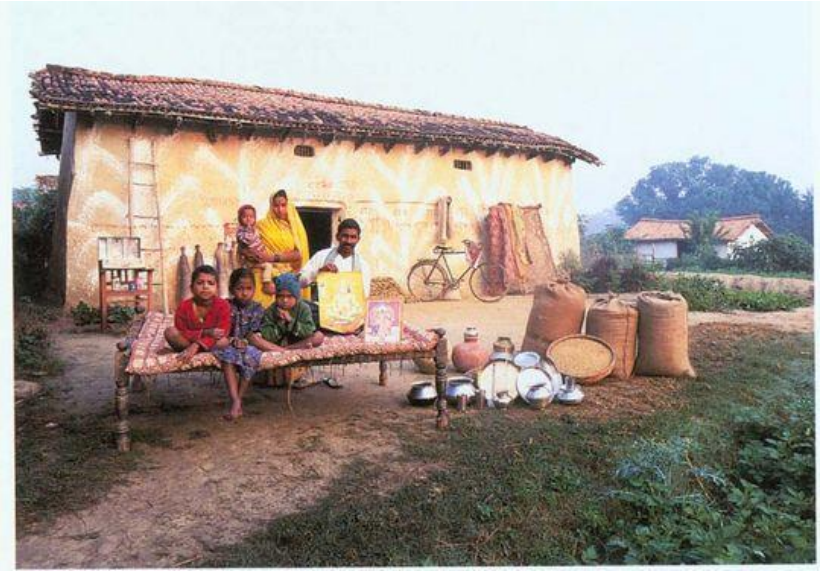


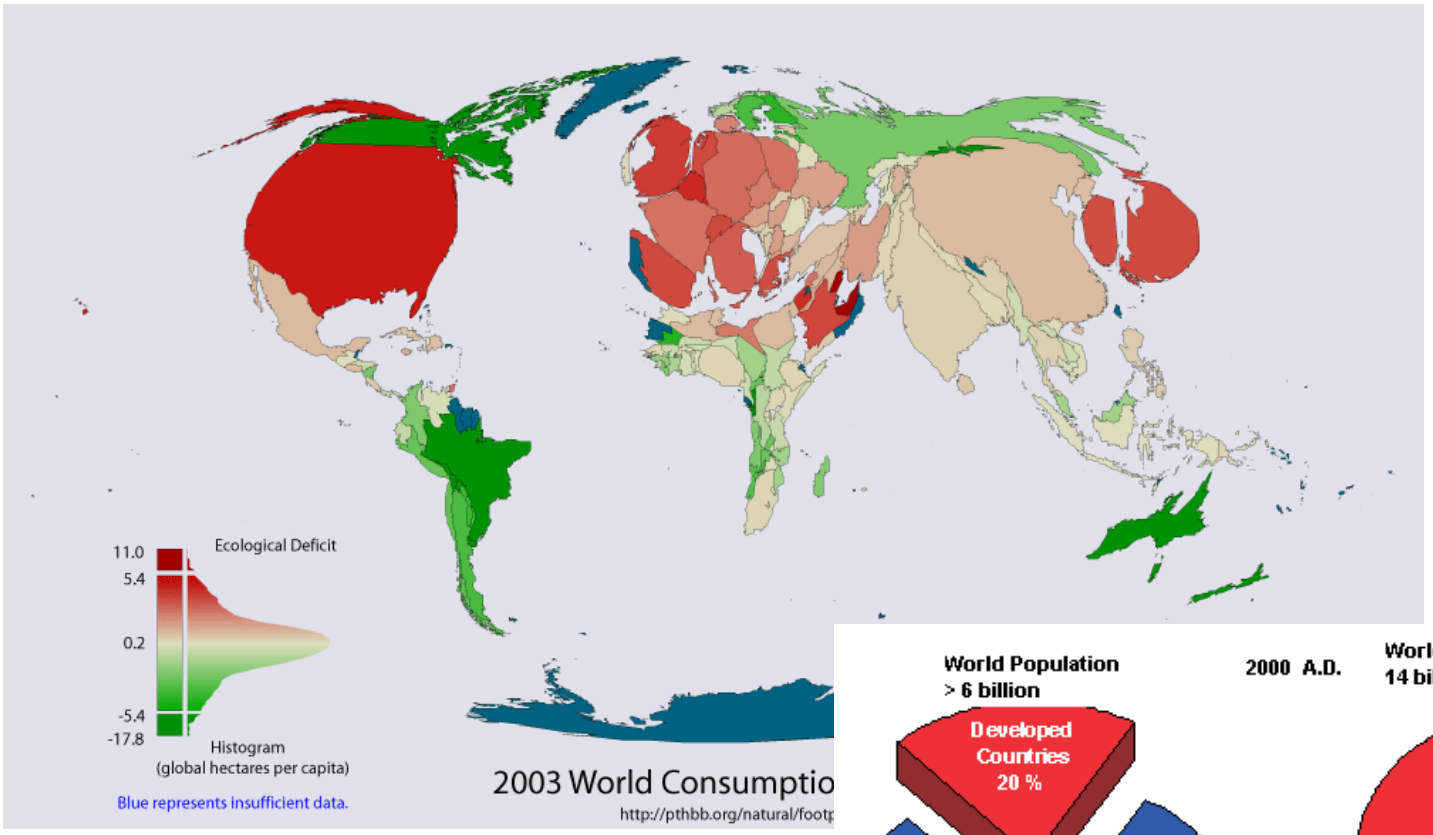
Figure 1-11 Simplified model of how three factors—population, affluence, and technology—affect the environmental impact of population in developing countries (top) and developed countries (bottom).

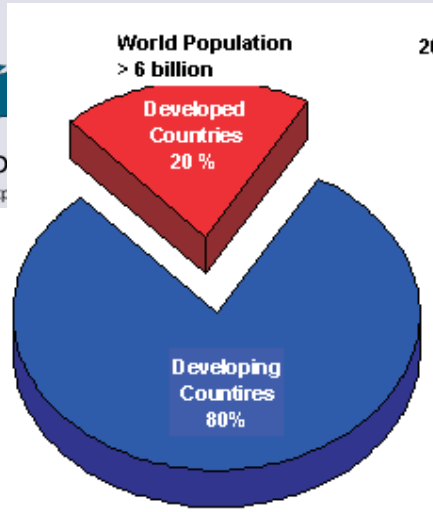
Consumption in developed vs developing countries

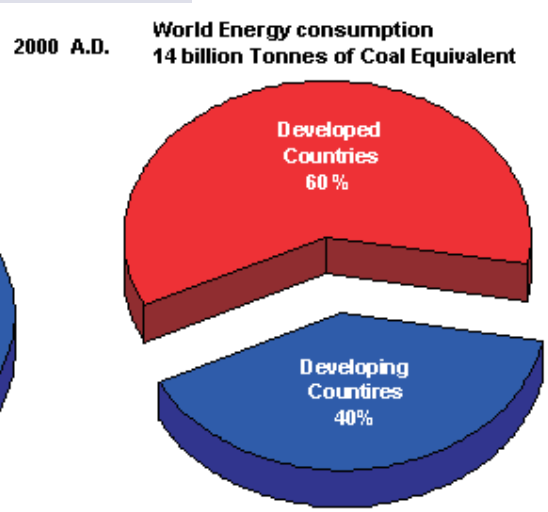
- Many believe that the numbers of people is not the real issue but the amount of resources they consume



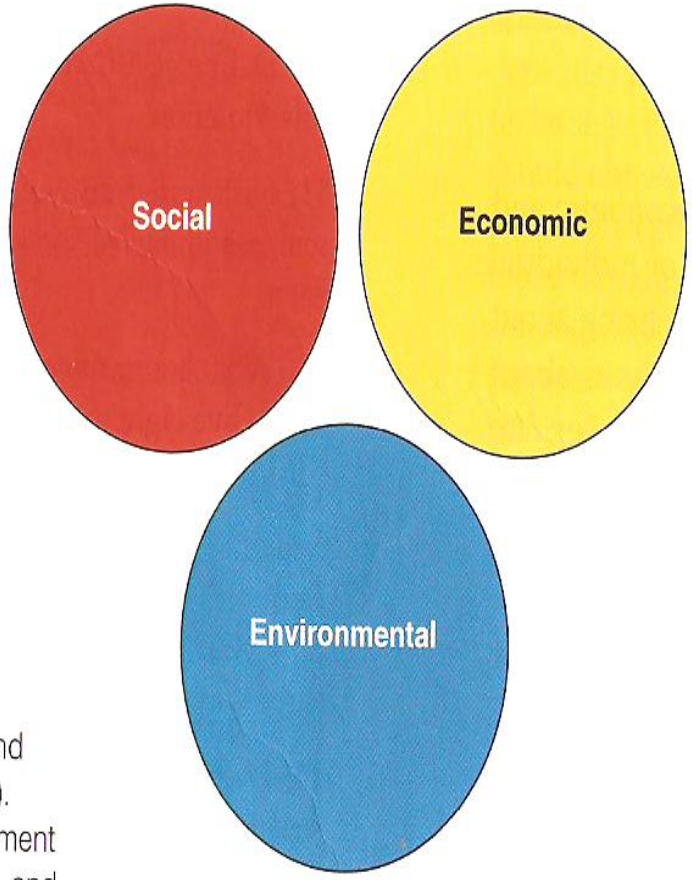
World consumption patterns



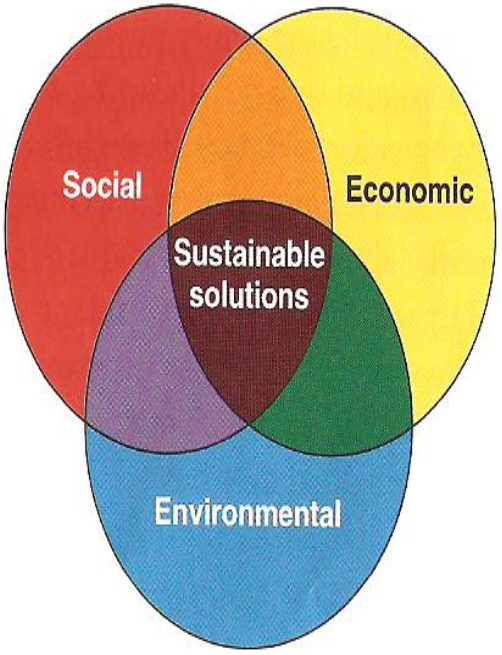




Decision Making in Sustainable Societies



Traditional decision making



Decision making in a sustainable society

Figure 1-13 Types of decision making in traditional and sustainable societies. The traditional decision making in most societies involves treating social, economic, and environmental issues separately (left). Environmentally sustainable development calls for integrating social, economic, and environmental issues and concepts to find *sustainable solutions* to problems (right).