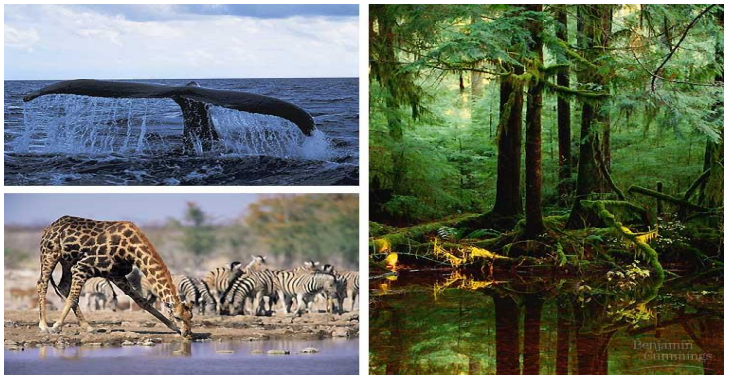
Course Code:MCC102A
Course Title:Environmental Studies

Lecture No: 1
Title: Multidisciplinary nature of environmental studies

Course Leader : Ms. Priyanka N



Contents

The multidisciplinary nature of environmental studies, Definition, scope and importance , Need for public awareness

Intended Learning Outcomes

At the end of this lecture, students will be able to

- Define Environment, Environmental Science and related terms
- Explain the different types of resources
- Discuss Environmental problems

What is environment?

- Environment is everything that affects a living organism.
- **Our environment is everything that surrounds us, both natural and man-made.**
- Includes both living (biotic) and non-living (abiotic) components.
- The combination of external physical conditions that affect and influence the growth, development, and survival of organisms.

Definitions

Environmental science (or studies)

Interdisciplinary studies in natural sciences, including geology, climatology, hydrology, ecology, **and their interaction** with social sciences such as economics, political science, sociology, anthropology, geography

More definitions

- Ecology

  Study of the interactions between organisms and between organisms and their environment

- Ecosystem

  Includes all organisms living in an area and the physical environment with which these organisms interact

Importance of Environmental Studies

- The environmental studies **enlighten** us, about the **importance of protection and conservation of our environment**

- The **dependence for our daily needs** on nature is so great that we cannot continue to live without considering the protection of environment

- Over the past 200 years modern societies began to believe that easy answers to the question of **producing more resources** could be provided **by means of technological innovations**

- This **lead** to the hasty development of industries and led to **rapid economic growth**

- The ill effects of this type of development, **led to environmental degradation**

Scope and Importance of Environment Studies

- Environment is **not a single subject**. It is an integration of several subjects that **include both Science and Social Studies**
- To understand all the different aspects of our environment we **need to understand biology, chemistry, physics, geography, resource management, economics and population issues**
- Thus **the scope** of environmental studies is **extremely wide** and covers some aspects of nearly **every major discipline**
- **Daily lives** of humans are linked with their surroundings and **inevitably affects them**

Significance of Environmental Studies …..

- Environment Issues Being of **International Importance**
- Problems Cropped in **The Wake of Development**
- Explosive **Increase in Pollution**
- Need for An **Alternative Solution**
- Need To **Save Humanity From Extinction**
- Need For **Wise Planning of Development**

Scope and Importance of Environment Studies

Environment studies have become significant for the following reasons:

- **Preservation:** Every natural resource/ ecosystem must be preserved and protected to maintain a balance in the environment
- **Global phenomena:** Issues pertaining to the environment are faced by every country in the event of any major development. A new set of problems crop up in the wake of development
- **Uncontrolled Increase in pollution:** Rapid industrialization and urbanization has led to pollution of various components of the environment
- **Sustainable development:** There is a need to search for solutions to development with minimal harm to the environment

Major environmental concerns

Cause:

- **Over exploitation** of **natural resources**
  - Forest
  - Water
  - Food
  - Energy
  - Land
- **Environmental Pollution**
  - Air
  - Water
  - Land
- **Population**

Effect:

- Disease
- Water Shortages
- Water Contamination
- Climate Change
- Biodiversity Loss
- Poverty
- Malnutrition

Major environmental concerns

Cause:

Deforestation

Effect:

Soil erosion

Need for Public Awareness

- As the earth's natural resources are dwindling and our **environment is being increasingly degraded by human activities**, there is a need for action
- **Prevention of environment degradation** must become a **major goal** for all
- **Decrease of harm on our environment**. It is economically more viable than cleaning up the environment once it is damaged
- **Reduction of natural resources wastage**. Government should be informed of sources that lead to pollution and degradation of our environment
- This can only be made **possible through mass public awareness**

Our Greatest Environmental Problem?????

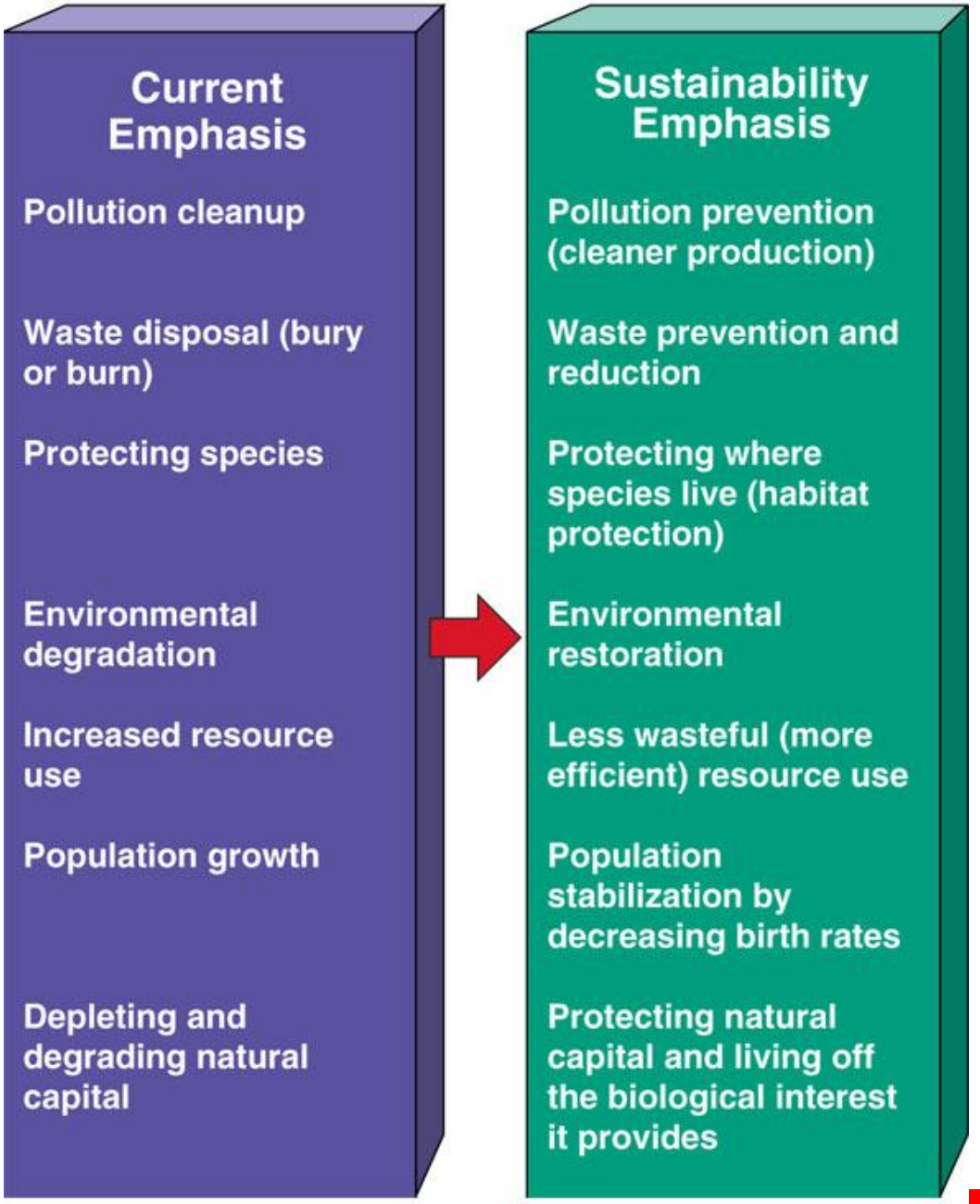
- Diseases
- Overpopulation
- Water Shortages
- Climate Changes
- Biodiversity Loss
- Poverty
- Malnutrition

Need for Public Awareness…

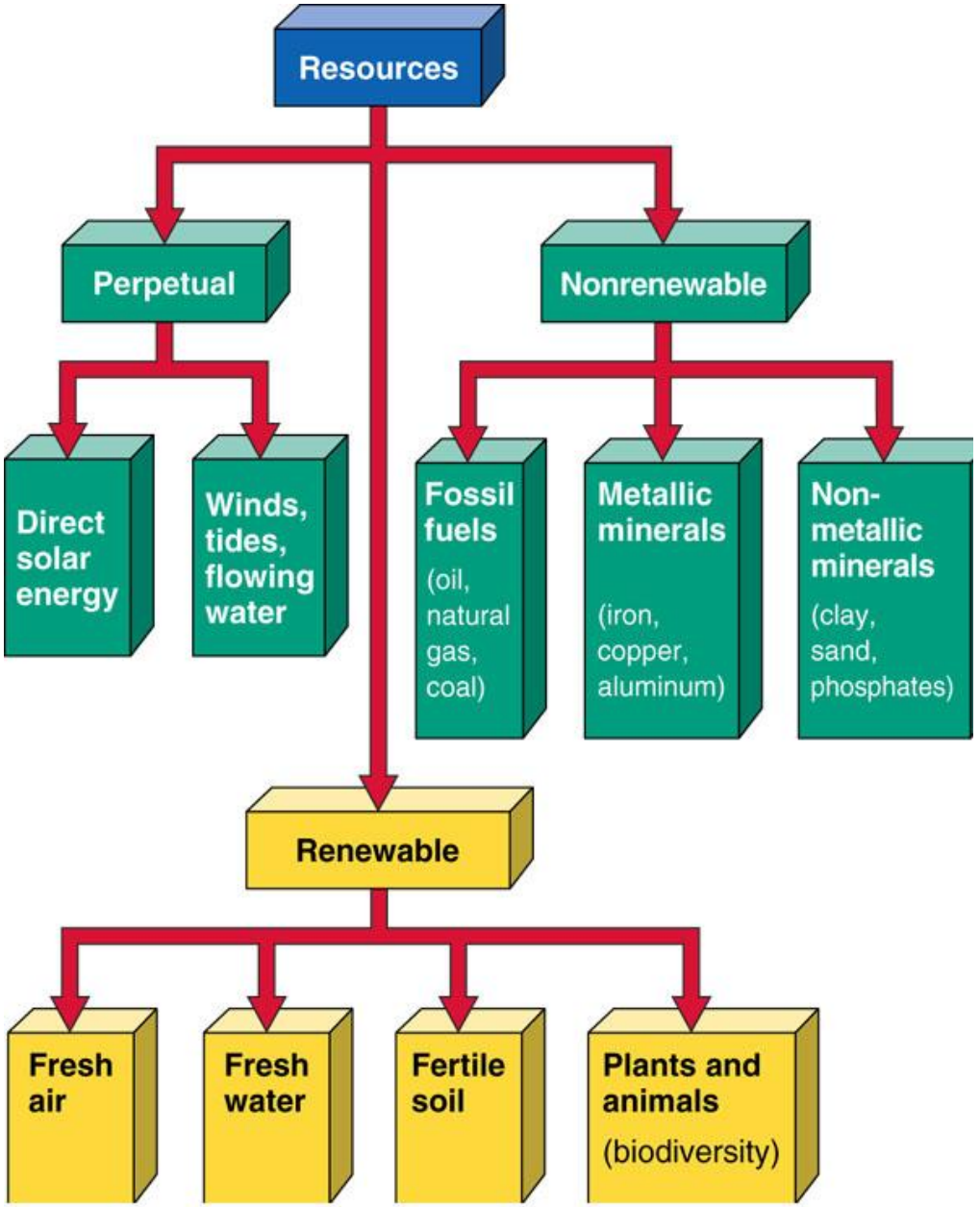
- Growing Population
- Poverty
- Agricultural Growth
- Need to improve Ground water
- Development and Forests

Solutions

- Current Emphasis (Reactive)
- Sustainability Emphasis (Proactive)



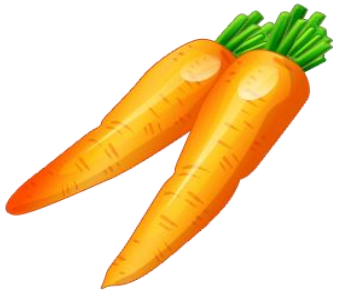
Natural Resources



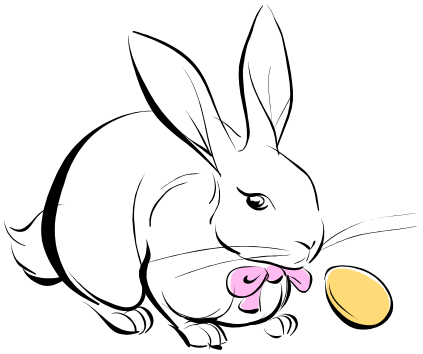
Introduction to Natural Resources

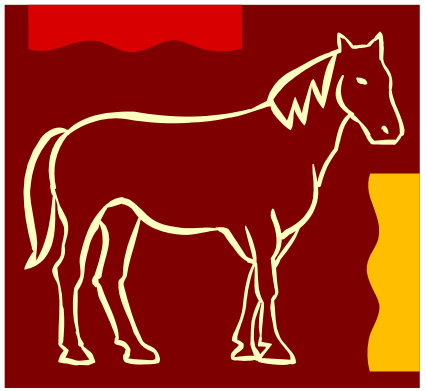
- Natural resources are **naturally occurring substances** that are considered valuable in their relatively unmodified (natural) form.
- A **natural resource's** value rests in the amount of the material **available and the demand for it**. The latter is determined by its usefulness to production.
- A commodity is generally considered a natural resource when the primary activities associated with it are **extraction and purification**, as opposed to creation.
- Natural resources are mostly **classified** into **perpetual, renewable and non-renewable resources.**

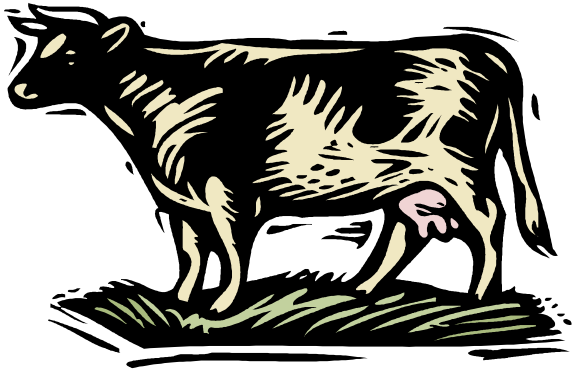
Plants

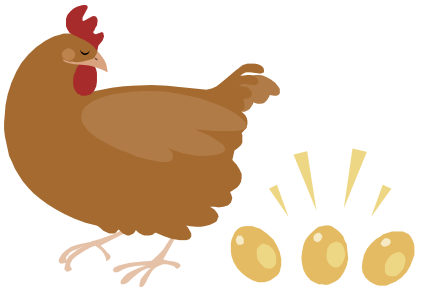


Animals

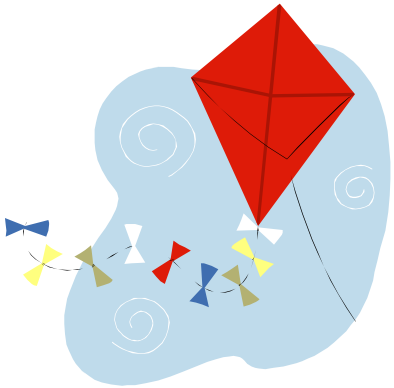






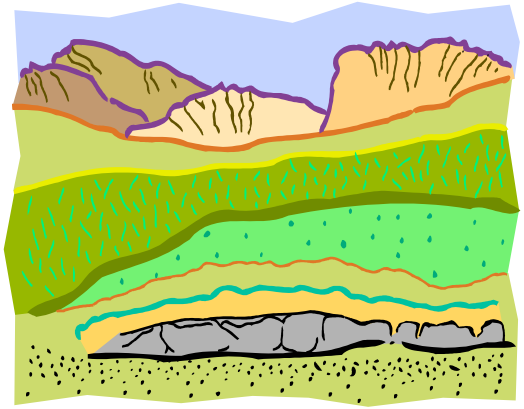


Air



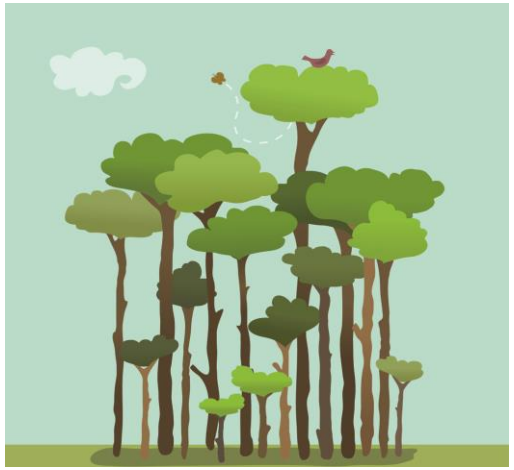
Water

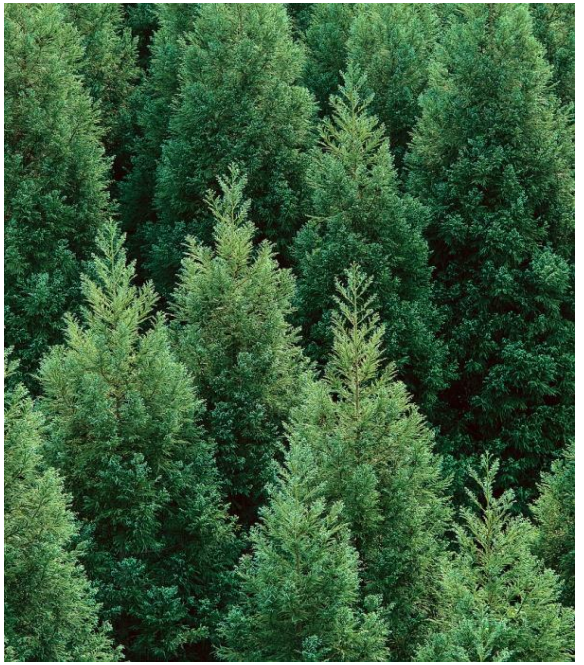
Land and Soil



Minerals

Forests

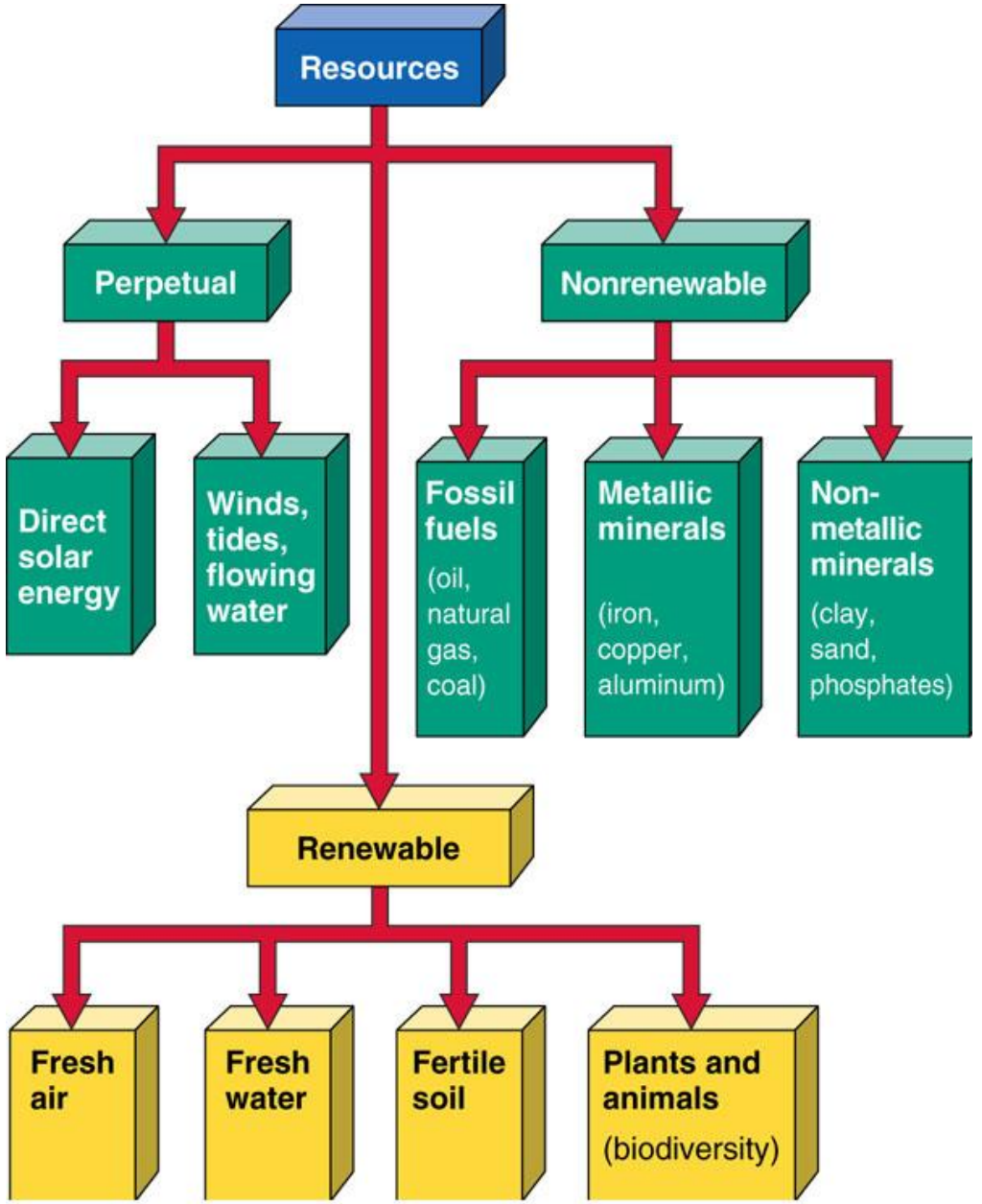




Natural Resources

- Perpetual
  - Solar – renewed continuously
- Renewable
  - Replenished fairly rapidly through natural processes

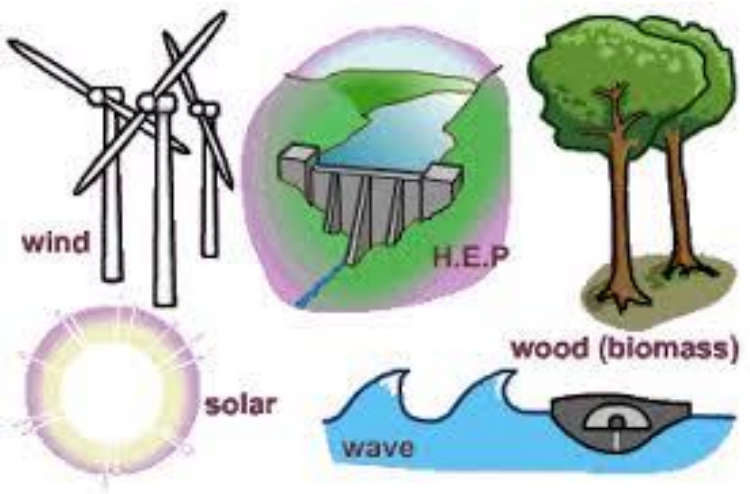
- Non-renewable
  - minerals



Renewable Resources

- Sustainable Yield
  - Highest rate at which a potentially renewable resource can be used without reducing its available supply throughout the world or in a particular area

Renewable Resources



Environmental Degradation

Depletion or destruction of a potentially **renewable resource** such as soil, grassland, forest, or wildlife that is used faster than it is naturally replenished. If such use continues, the resource becomes **nonrenewable (on a human time scale) or nonexistent (extinct)**.

Non-Renewable Resources

Resource that **exists in a fixed amount (stock)** in various places in the earth's crust and has the potential for renewal by geological, physical, and chemical processes taking place over hundreds of millions to billions of years.

Non-Renewable Resources

- Energy, metals, and other minerals
- Examples are copper, aluminum, iron, salt, clay, coal, and oil.
- Any potentially renewable resource can become non-renewable if used improperly
- Theoretically, **never exhaust due to economic feasibility for extracting**

Summary

- Environment is everything that affects living organisms
- The scope of environmental studies is extremely wide and covers some aspects of nearly every major discipline.
- The ill effects of development led to environment degradation
- There is a need to search for solutions to development with minimal harm to the environment.
- Decrease of harm on our environment. It is economically more viable than cleaning up the environment once it is damaged.

Summary

- Public awareness is must to control environment degradation
- Natural resources are naturally occurring substances that are considered valuable in their relatively unmodified (natural) form
- Plants, animals, air, water, land and soil, minerals, forests are natural resources
- Natural resources are divided into perpetual, renewable and non – renewable resources

Summary

- Depletion or destruction of a potentially renewable resource such as soil, grassland, forest, or wildlife that is used faster than it is naturally replenished. If such use continues, the resource becomes nonrenewable (on a human time scale) or nonexistent (extinct).