

NATURAL RESOURCES

Earth's biosphere is endowed with extremely diverse kinds of environments which provide countless goods and services to human kind. Any component of the natural environment that can be utilized by man to promote his welfare is considered as a natural resource. The natural resource can be a substance, an energy unit or a natural process or phenomenon. Land, soil, water, forests, grasslands, etc. are examples of important natural resources. Some of the resources (e.g. soil, water) are important components of the life-supporting system. Besides being source of food, fodder and shelter, natural resources also provide recreational opportunities, solace and even inspiration to mankind. Natural resources have been exploited by humans since the beginning of civilization or even before. However, since the resources were abundant then relative to human population, no significant depletion occurred. During the last millennia human population has increased considerably causing serious damage or destruction of natural resources. In this chapter we will study major kinds of natural resources, causes of their degradation and their conservation.

CLASSIFICATION OF NATURAL RESOURCES

Natural resources vary greatly in their location, quantity and quality. For instance, a particular forest type may occur only in certain countries. Also, the geographical area covered by forest and wood quality may differ widely in different countries. Some resources can be reused after being used once. A convenient classification of resources is based upon their exhaustibility and renewability (Fig.1). Basically, resources can be categorized as Inexhaustible and Exhaustible.

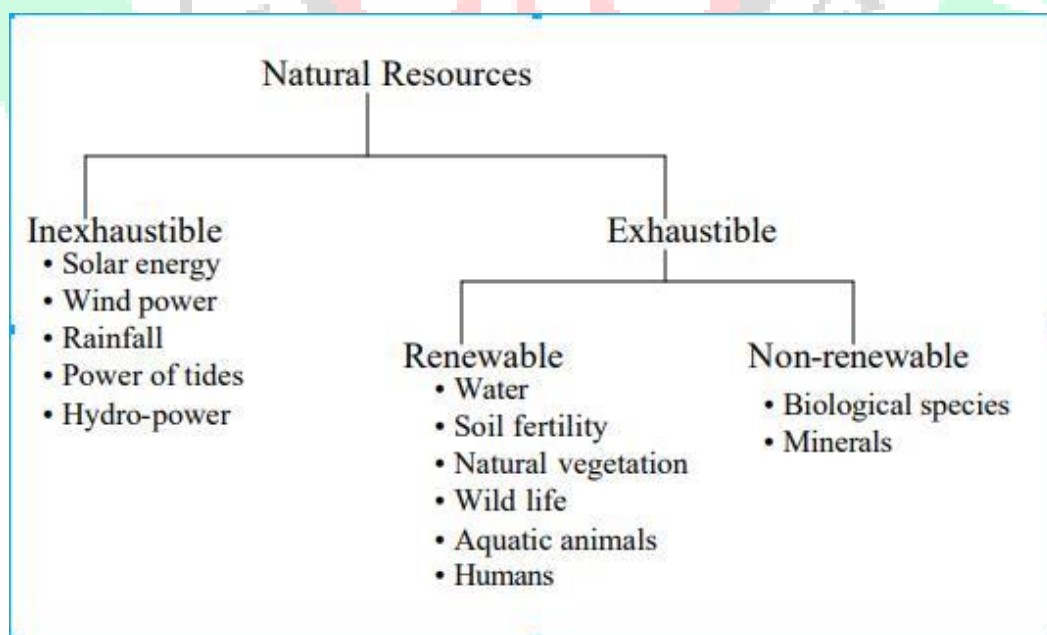


Fig. 1. Basic types of natural resources. Also shown are few examples of different kinds of resources

Inexhaustible resources

Inexhaustible resources are available in unlimited quantities on the earth. While some inexhaustible resources remain virtually unaffected by human impact, many others may show some changes in their quality though their quantity may remain unchanged. Resources like solar energy, wind power, tide power, rainfall, and even atomic energy, cannot be exhausted significantly at global level due to human activities. Such resources may sometime be locally affected by human activities; for example, pollution may change the quality of air.

Exhaustible resources

A large number of natural resources are exhaustible, i.e. they have finite supply on the earth and can be exhausted if used indiscriminately. Broadly, the exhaustible resources can be either renewable or non-renewable

Renewable resources: Most of biotic resources are renewable. The growth and reproduction of such resources can be successfully managed so that these resources are continuously regenerated. However, if the consumption of these resources continues to exceed their rate of renewal not only their quality becomes affected, they may even get totally exhausted.

Selected examples of ecosystems and their important renewable products are:

- (1) Forests, which yield timber and other plant products,
- (2) Rangelands, which sustain grazing animals for milk, meat and wool production,
- (3) Wildlife, which maintain food chain,
- (4) Agricultural systems, which yield food and fibre, and
- (5) Marine and fresh water systems, which yield various foods from plants and animals. Soil and water are other renewable resources.

Non-renewable resources: Some biotic resources are non-renewable, i.e. they cannot be regained or reconstructed once they are used up. Biological species, which have evolved in nature during the course millions of years, are considered non-renewable. Once a biological species becomes extinct from the earth, it cannot be recreated by man.

Many abiotic resources are also non-renewable. For instance, fossil fuels (coal, petroleum and gas) and metals once extracted cannot be regenerated at the place of extraction. After unlimited extraction and use, the fossil fuels will certainly get exhausted.

PRINCIPAL NATURAL RESOURCES

Amongst the earth's resources the following contribute significantly to human welfare:

- (i) Forests (ii) Water (iii) Minerals (iv) Food (v) Energy and (vi) Land