Natural Resources: Meaning, Types and Characteristics

Meaning of Natural Resource Economics

Natural resources are derived from the environment. Every man-made product in an economy is composed of natural resources to some degree.The long-term viability of the food supply depends upon the sustainable use of natural resources. Resource economists study interactions between economic and natural systems with the goal of developing a sustainable and efficient economy. Resource economists provide science-based information to deal with natural resource management based on economic management principle.

Natural resource economics deals with the supply, demand and allocation of the earth natural resource. The field of Natural Resource Economics seeks to value natural resources to aid in the optimization of the production of goods and services from agricultural lands while protecting the environment. Main objective of natural resource economics is to better understand the role of natural resources in the economy in order to develop more sustainable methods of managing those resources to ensure their availability to future generations. In other words, the goal of natural resource economics is to develop an efficient economy that is sustainable in the long-run. Natural resource economics also demonstrates how policy incentives might motivate better choices by agriculture producers and makes predictions about the potential side effects of those choices.

Meaning of Natural Resource

In simple words, natural resources are natural assets (raw materials) occurring in nature that can be used for economic production or consumption. Natural resources can also be defined as the resources that exist naturally on the earth planet independent of human actions for its generation or production. It refers to any source of wealth that occurs naturally, such as land, water, soil, plant, animals and minerals, especially, fossil fuels, coal, etc. They are the natural capital out of which other forms of capital are made. These are the resources that are found in the environment and are developed without the intervention of humans. They are known as Natural Resources because they provide for the basis of life on earth.

Types of Natural Resources

There are numerous ways to classify the types of natural resources which are discussed as below:

A) In terms of the source of origin, natural resources can be divided into the following types:

1. Biotic: The Biotic natural resources are the ones that come from the organic and living materials. These include resources such as animals, forests (vegetation), and other materials obtainable from them. Fossil fuels such as petroleum, oil, and coal are also included in this grouping because they are generated from decayed organic matter.

2. Abiotic: The abiotic natural resources are the ones that come from non-organic and non-living materials. Examples of abiotic natural resources are water, land, air and heavy metals like iron, copper, silver, gold, and so on.

The main difference between renewable resources and non-renewable resources is summarized in the following table:

Difference Between Biotic Resources and Abiotic Resources	
Biotic Resources	**Abiotic Resources**
Definition	
Biotic factors include all the living components present in an ecosystem	Abiotic factors refer to all the non-living, i.e. physical conditions and chemical factors that influence an ecosystem
Examples	
Examples of biotic resources include all flora and fauna	Examples of abiotic factors include sunlight, water, air, humidity, pH, temperature, salinity, precipitation, altitude, type of soil, minerals, wind, dissolved oxygen, mineral nutrients present in the soil, air and water, etc.
Dependence	
Biotic factors depend on abiotic factors for survival and reproduction	Abiotic factors are completely independent of biotic factors
Origin	
Biotic components originate from the biosphere	Abiotic components originate from the lithosphere, hydrosphere and atmosphere

(B) Natural resources can also be categorized based on their stage of development:

1. Potential resources: Potential resources are those natural resources which are already easily available but humans are yet to discover their real power. For example, solar and wind energy are two natural resources, which have a high potential for human life. Though we are using it, we can use these even more in the future once we understand their true potential. Similarly, if a country has petroleum in sedimentary rocks, it is a potential resource until it is actually drilled out of the rock and put to use.

2. Actual resources: Actual resources also known as developed resources are those resources which humans have discovered and developed over a long time. They have already been surveyed, their quantity and quality has also been determined and are currently being used. . Most of the water, fossil fuel, minerals, plants and animals that we use for our need today, are actual resources. The development of actual resources is dependent on technology.

3. Reserve resources: Reserve resources are those actual resources which we are not extracting them at present in spite of technological availability. They are stored to meet world's future requirements. Storing of water in dam to meet energy requirement such as generating electricity in future is an example of reserve resources.

4. Stock resources: Stock resources are those resources for which presently there is no technology to extract them. These are resources that have been surveyed, but cannot be used due a lack of technology. For example, Water consists of Hydrogen and Oxygen which are inflammable but we do not know the technology to extract energy from these elements.

(C) Natural resource is also classified based on their renewability:

1. Renewable natural resources: Those resources that are available in infinite quantity and can be used repeatedly are called renewable resources also alternative called as inexhaustible resources. These are resources that can be replenished. Examples of renewable resources include sunlight, air, and wind. They are available continuously and their quantity is not noticeably affected by human consumption. However, renewable resources do not have a rapid recovery rate and are susceptible to depletion if they are overused.

2. Non-renewable natural resources: Those resources that are limited in abundance due to their non-renewable nature and whose availability may run out in the future are called non-renewable resources also alternative called as exhaustible resources. These resources form extremely slow and do not naturally form in the environment. A resource is considered to be non-renewable when their rate of consumption exceeds the rate of recovery. Examples of non-renewable natural resources are minerals and fossil fuels.

The major difference between renewable resources and non-renewable resources is summarized in the following table:

Renewable Resources	Non Renewable Resources
1. Renewable resources can be easily recycled..	1. Non-renewable resources take millions of years to form once exhausted.
2. Renewable resources are also called inexhaustible resources.	2. Non-renewable resources are also called exhaustible resources.
3. Eg: Air, water, forests	3. Eg: Fossil fuels, soil & minerals
4. Renewable resources are environment friendly resources as they do not release any harmful particles to the atmosphere.	4. Non-renewable resources are not environment friendly resources as they release carbon dioxide, methane and other toxic gases while burning.
5. Renewable resources are abundant in nature.	5. Non-renewable resources are scarce in nature.

Characteristics of Natural Resources

The following are the main Characteristics of natural resources:

- **Destructability** – Most natural resources are destroyed in the process of use. Resource destruction could ensue / arise from the process of consumption – coal and firewood for cooking, fuel for vehicles etc. Most of the problems of desertification and aridization were said to have resulted from the activities of man on the natural vegetation – shifting cultivation, burning of forest for games and grazing and browsing of the natural vegetation leading to desertification of the original vegetation.
- **Common Property –** Ownership of natural resources is not clearly defined since they are gifts of nature, no man can claim ownership – marble Industry in Oyo State and the attendant rows – deep sea fishery, forestry are also common properties. Hence, people go into the bush to fetch firewoods, pick snails etc. Most forest reserves belong to the State and communities, hence cases of illegal fellers.
- **Importance of time factor –** For most renewable resources, there is always a waiting period for the production to be increased. For timber, there is a minimum period for maturity. The growth rate of most biological organisms are beyond man's influence.
- **Natural Resources as part of the Environment** – They form integral part of the environment. i.e. the living and non-living surrounding. The users quite often are not aware of the effects of their actions in forests on the adjoining forest areas.e.g. clearing of the premier plantation for the building of the cultural Centre in Ibadan and the 1980 flood in the city.

- **Uneven Distribution-** Natural resources are natural endowment and their distribution is uneven both within and between countries.. Some countries have monopoly of some.e. g. Bauxite in Jamaica (80% of the production) while the rest is in South Africa. However, this is not true of forests. Most countries are capable of growing forest – it is not as uneven as other resources.
- **Versatility –** This means that natural resources can be stored for long period of time without deterioration. This is particularly true of resources derived from geological processes.e.g. Coal, oil (petroleum). Versatility of timber will not only leave the timber resources intact, but could lead to increase in timber value – as the timber increases in both height and diameter (volume). The bigger the timber the more the value. However, if timber is left unharvested after an advanced age of maturity, deterioration may set in due to pathological hazards – heart rot, etc.
- **Finiteness –** This refers to the quantity available at a given time. The quantity of natural resources available is absolutely fixed. This is what the engineers and technologists refer to as "Proven-supply". i.e. the quantity of the resource known to exist.e.g. resources obtained through geological processes. Their development requires a time scale and quantity cannot be increased on the short run.