MANAGEMENT OF NATURAL RESOURCES

9
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NATURAL RESOURCE

- Natural resources are nonliving and living components of nature which are being used or have the potential of being used by human beings for meeting their requirements of food, fodder, shelter, clothing, articles of use and recreation.

◈ **Inexhausitble resources :**

- Inexhausitble resources are those resources which occur in such abundance that they are unlikely to get exhausted with time, *e.g.*, water, air, solar energy.

◈ **Exhaustible Resources :**

- Exhaustible resources are resources which are likely to diminish and get exhausted with continuous exploitation.

Exhuastible resources of two types :

(i) Renewable Resources :

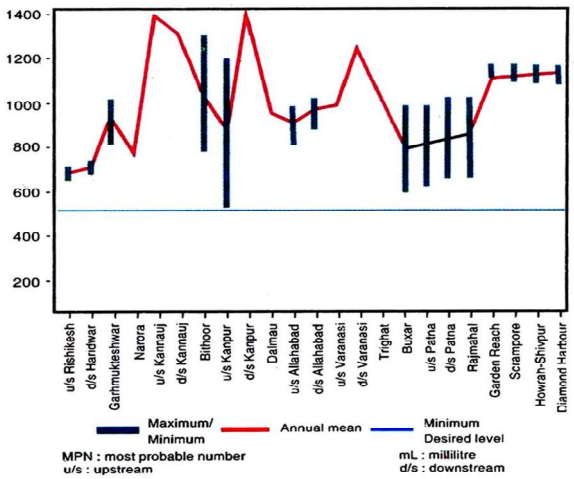
Renewable resources are exhaustible resources that are being replenished naturally and are, therefore, likely to remain available if they are not used beyond their renewability, *e.g.*, forests, wildlife, soil.

(ii) Nonrenewable Resources :

Nonrenewable resources are those resources which are likely to get exhausted with continued use because of lack of regeneration, *e.g.*, fossil fuel.

GANGA ACTION PLAN

Ganga Action Plan (GAP) was formulated to reduce pollution load of river Ganga by more than 75%. The plan has been carried out in two phases since 1985. The water quality has been tested from time to time by checking coliform (group of harmless bacteria in human intestine) number/100ml. The important aspect of GAP has been (i) Diversion of sewers away from river (ii) Treatment of sewage and changing it into an energy source (iii) Construction of community toilets. (iv) Establishment of electric crematoria. (v) Development of solid waste management system. (vi) Enforcement of setting up of effluent treatment plants by the industry. (vii) Development of Ghats and interceptions.



ENVIRONMENT FRIENDLY DECISION

◈ **Reduce :**

It is reduction is the use.

- Preferring articles with less packing.
- Switching off lights, fans and other gadges not in use.
- Repairing leaky taps.
- Turning off taps while brushing teeth.
- Do not carry extra food in your tiffin.

◈ **Recycle :**

- It is processing of the waste articles so as to form new produces. A number of materials can be recycled, *e.g.*, tins, cans and other metallic articles, rags, paper carboard, glass plastic, polythene. Metal wastes can be melted to form new purified metal.

◈ **Reuse :**

It is the repeated use of an article till it gets broken or disfigured. Reuse is better than recycling as recycling uses some amount of energy.

- Wherever possible use metallic, glass and ceramic containers.
- Use cloth carry bags instead of polythene or paper bags of carrying articles from the market.
- Fit new refill in your ball pen instead of throwing the same and purchasing a new one.

➢ FORESTS AND WILDLIFE

Forests (L. foris – outside) are large uncultivated self maintained wooded tracts dominated by trees forming a nearly closed canopy. Besides trees, the forests possess shrubs, climbers, herbs, herbivores, carnivores, saprophytes and parasites living together maintaining hormony of nature.

Wildlife refers to living beings comprising animals, plants and micro-organisms found in natural habitats which are neither do domesticated/tamed nor cultivated.

◈ **Economic Functions :**

***Foods* :**

- Tribals obtain most of their food requirements from the forests, *e.g.*, fruits, tubers, fleshy roots, leaves.

***Nuts* :**

- Pine Nut (Chilgoza), Almond, Walnut and Cashewnut are obtained from forests trees.

***Spices* :**

- Cardamon, Cinnamon, Nutmeg and Cloves are spices obtained from forest plants.

***Commercial Products* :**

- A number of forest products are of commercial importance, e.g., & rubber, resin, tennins, tendu, lac, cork, camphor, essential oils. soap pod and drugs.

***Fuel Woods* :**

- Nearly two billion persons depend upon forests for fuel wood.

***Timber* :**

- Wood for the manufacture of furniture, household fitments and several other articles mostly comes from forests.

***Paper* :**

- It is prepared from cellulose rich plants like bamboos, *Boswellia*, *Eucalyptus*, grasses and several gymnosperms.

◈ **Stakeholders :**

- Stakeholders are person or parties having a binding interest in an asset. Forests have four types of stakeholders – locals, forest department, industrialists, wildlife and nature enthusiasts.

◈ **Deforestation :**

- Removal, decrease or deterioration of the forest cover of an area is called deforestation. It is caused by excessive felling of trees, overgrazing, monoculture, fragmentation and clearing of forests. Deforestation causes.

***Soil Erosion* :**

- Removal of plant cover exposes the fertile soil to wind and water. The latter remove the top soil and make the area infertile.

***Desertification* :**

- Removal of forest cover in the plains, makes the area dry. In hot season, the soil become loose.

***Floods* :**

- In rainy season many temporary rivulets are formed due to loss of absorption capacity by unprotected soil.

***Destruction of Wildlife* :**

- Deforestation leads to destruction of natural habitats of wild animals and plants. Wildlife is, therefore, destroyed.

***Climatic Changes* :**

- In the absence of forest cover, the summer becomes hotter while the winters become extra cool. The frequency of rainfall decreases.

◈ Sustainable Management :

- Sustainable management is controlling the use of a resource in such a way as to provide equitable availability and continuous flow of products and services to the present generation while ensuring the same for future generation without any harmful impact on the environment.

➢ WATER USE

Water is a basic need for human society being required for drinking, bathing, washing, irrigation, industry, cooling, construction work, disposal of sewage and industrial effeuents. Agriculture consumes the maximum amount of water, some 70% of total. Industry requires 26% of water. Domestic and municipal consumption of water accounts for only 1.1%. Because of rising population, increasing urbanization, growing industrialization, rising standards of living, the demand for water is increasing day by day.

◈ Water Availabilty :

- The basic source of water availability is rainfall. It occurs in India mostly during monsoon period which lasts for 3-5 months. For the rest of the year, there is no rain. The source of water availability shifts to ground and surface waters.

◈ Dams :

- Dams are barriers constricted across stream to hold back water, raise its level and form reservoirs
- Dams prevent flooding because they store water during rainy season. They are used for generation of electricity (hydroelectric power). Canal system leading from these dams carry large amounts of water year round to great distances of irrigation and navigation.
- Indira Gandhi Canal, for example, has taken water arid areas of Rajasthan (*e.g.*, Jaisalmer, Barmer) bringing greenery all along the way, providing drinking water to thousands of people and irrigation facilities for growing crops like wheat, cotton and mustard.

  There are three major problems associated with building of large dams.

***Social Problems* :**

- A large number tribals, peasants and other villagers are displaced. Provision of adequate compensation and rehabilitation measures are not made.

***Economic Problem* :**

- A huge amount running into thousands of crores is spent on building large sized dams. They do not generate proportionate benefits.

***Environmental Problem* :**

- There is enormous deforestation and loss of biodiversity.

◈ Water Harvesting :

- Water harvesting is capturing, collection and storage of rain water and surface run off for filling either small water bodies or recharging ground water so that water continuous to available in

nonrainy seasons. Water harvesting has been an age old concept in India. The techniques used are highly region specific.

➢ COAL AND PETROLEUM

◈ Coal :

- Coal is a blackish solid fossil fuel that occurs in seams inside earth.

  Uses :

  - Fuel for domestic and commercial establishments.
  - Production of electricity in thermal plants.
  - Manufacture of coke
  - Gasification and liquefaction yields fuel gas and synthetic petrol.
  - A number of organic compounds can be obtained from coal-benzene, toluene, phenol, anilines, naphthalene.

◈ Petroleum :

- Petroleum is a dark coloured liquid fuel that is taken out from various depths of earth both on land and sea shore. It is called mineral oil or rock oil. Petroleum extracted from earth is called crude oil. With the help of fractional distillation

  Uses :

  - LPG is liquefied petroleum gas. It is used in cooking and heating.
  - Petrol, diesel and kerosene are used as a fuel for internal combustion engines of transport vehicles.
  - Lubricating oils provide lubrication to machinery.
  - Paraffin wax is used in candles, Vaseline and water proofing
  - Asphalt is source of several chemicals and dye. It is also used in carpeting of road.

◈ Pollution :

- Fossil fuels are formed of carbon, hydrogen, nitrogen and sulphur. On burning they produce carbon dioxide, water, oxides of sulphur and nitrogen. In the presence of insufficient oxygen, carbon monoxide is produced instead of carbon dioxide.

  ***Carbon Monoxide* :**

- It readily combines with haemoglobin forming carboxyhaemoglobin. The latter is unable to combine with oxygen. Therefore, carrying capacity of blood is reduced. In closed rooms, it may cause death due to asphyxiation. This is common in winter when coal fired heating device is used.

  ***Carbon dioxide* :**

- Being a green house gas, it adds to global warming.

  ***Nitrogen Oxides* :**

- They cause necrosis and killing of plant parts. Internal injuries, eye irritation and loss of smell are produced in human and animals. Corrosion occurs in metals. They are also component of acid rain.

  ***Sulphur Oxides* :**

- They kill lichens, damage metals, marble and other articles, cause eye irritation, damage to respiratory tract and cause acid rain.

  ***Flyash* :**

- Burning of coal also produces particulate matter called flyash it contains toxic ingredients.

◈ Management of Fossil Fuels :

- The management of fossil fuels is mainly based on better use through use of more and more efficient machines. The internal combustion engnies used by vehicles employed in transportation are concentrating on ensuring complete combustion. It will reduce air pollution and increase efficiency. 5-10% ethanol (ethyl alcohol) is being added to petrol to reduce consumption of the latter. Hybrid engines using hydrogen and gasoline are also being developed.