

# 1. Consumerism and waste products

Consumerism is related to the constant purchasing of new goods, with little attention to their true need, durability, product origin, or the environmental consequences of their manufacture and disposal. Consumerism interferes with the sustainable use of resources in a society by **replacing the normal common sense desire for an adequate supply of life's necessities, with and insatiable quest for things that are purchased by larger and larger incomes to buy them.**

Examples:

1. Cheap discarded products that fail to work within short time and cannot be repaired.
2. Consumer products are made psychologically obsolete by advertising industry long before they actually wear out.

**The IPAT equation :** A measure of impact of consumerism

$$I = P * A * T$$

Where I = Impact of consumerism on environment

P = Population

A = Affluence (means money or purchasing power of the population)

T = Technology

**Suggestions for efficient consumerism:**

1. Standards should be verified before buying or accepting a product from market.
2. In every possible way waste must be minimized.
3. Waste minerals have to be recycled.
4. Strict laws must be implemented.

## 2. From Unsustainable To Sustainable Development:-

Sustainable development is defined as “meeting the needs of the present without compromising the ability of the future generation to meet their own needs”. Our natural resources are just dividing due to over exploitation. if growth continuous in the same way, very soon we will be facing a doom’s day.

The earth summit held at Rio de Janeiro, Brazil in 1992 introduced **The Rio Declaration**. It aims at a new & equitable global partnership through the creation of new levels of cooperation among states.

### MEASURES FOR SUSTAINABLE DEVELOPMENT:-

#### 1. *Using appropriate technology:-*

It is one which is locally adaptable, eco-friendly resource efficient and culturally suitable indigenous technologies are more useful, cost effective and sustainable. Nature is often taken as a model, using the natural conditions of that region as its components. This concept is known as design with nature. The technology should use less of resources and should produce minimum waste. The key concepts involved here are **REDUCE, REUSE, RECYCLE**.

#### 2. *Prompting environmental education and awareness-*

Making environmental education the center of all learning process will greatly help in changing the thinking and attitude of people towards our earth and environment. Introducing the subject right from the school stage will inculcate a feeling of belonging to earth in small children.

#### 3. *Resource utilization as per carrying capacity*

Carrying capacity has two basic components

1. Supporting capacity i.e, the capacity to generate.
2. Assimilative capacity i.e the capacity to tolerate different stresses.

Any system can sustain a limited number of organisms on a long term basis which is known as its carrying capacity.

### **3. Water conservation, rainwater harvesting, and watershed management**

The efficient use of water implies doing more with less. Efficiencies can be gained in all sectors, including agriculture, municipal, domestic, and industry. Demand for more water has been very common. This demand can be reduced by careful planning. This involves the following measures:

1. More-efficient irrigation systems
2. Drought-resistant cultivars and crop rotations
3. More-efficient livestock watering systems
4. Water metering and charging for water
5. Use of effluent and wastewater for irrigation
6. Household water conservation.
7. The water resources have to be carefully managed through the following steps:
8. Dividing water resources into various divisions for effective supply
9. Laying a network of supply pipelines
10. Building reservoirs for storing water
11. Increasing water availability through groundwater extraction
12. Treatment of wastewaters and making arrangement for their reuse
13. Reducing losses through seepage and evaporation.

#### **Surface water management**

Surface water management requires effective measures to control the extremes of floods and droughts, while maintaining a reliable water supply to meet the basic needs of human life and the demands of economic development. Because of the high degree of variability of precipitation, water storage is a must to provide a year-round supply of water. The storage in the form of reservoirs, dams, dugouts, and natural lakes has been a common practice. A significant challenge to water managers is locating surface water supplies relative to that of water users. Water users (domestic, municipal, agricultural, and industrial) usually require a number of resources and services and are not always located near the water sources. Providing a reliable supply of water to users often requires distribution networks consisting of canals and pipelines.

## **4. Rain Water Harvesting**

What Is Rain Water Harvesting?

It is a technique or strategy for the collection of rainwater and storing it in the right way for future use. The water can be collected from various surfaces and platforms and stored for later use. In most cases, the water is usually collected from rooftops and other hard surfaces. Rainwater harvesting is considered as a very reliable way to conserve water.

### **Advantages of Rainwater Harvesting**

In both urban and rural setting, harvesting can be done by the use of infrastructure. One of the simplest ways of storing water from the collection is storage tanks. In most cases, the harvested water is usually redirected to storage tanks, cistern or reservoirs. The water is usually stored for later use. The roof of buildings is the best way to harvest rainwater. There are numerous advantages in doing so.

1. Easy to Maintain
2. Reducing Water Bills: Water that has been stored from harvesting water can be used for several non-drinking purposes. It is ideal for both residential and commercial properties.
3. Suitable for Irrigation
4. Reduce demand on Ground Water

### **Techniques of Rainwater Harvesting**

The collection of rainwater can be done in various methods depending on a few factors. A few common methods include the following:

#### *1. Rain barrels*

It is the easiest and affordable method of rainwater harvesting, especially at home. It is where barrels or water tanks installed below the downspouts of the rooftops guttering system. The water is then funnelled/directed into the tanks. The tank can be connected to provide backup water to your current plumbing system, or it can be attached to a pipe for drip irrigation. The use of barrels or tanks is ideal since it can store significant amounts of water.

#### *2. Dry System*

It is similar to the barrel's system, but with the dry system, a larger storage container is used. The container is usually a few meters away from the property. The gutter is redesigned so that water is diverted to the large storage tank. It is a quick and cheap method to implement but has significant rewards.

### *3. Wet System*

It is a technique that is entirely different from the dry system. Here, the collection pipes will always have water in them. It is because they will be situated underground. In the wet system, many collection pipes are connected to the downspouts of a building and diverted into a storage tank, which is also underground. The pipes need to be secure and well maintained to ensure there is no leakage into the soil.

## **5. Watershed Management**

**Watershed:** The watershed is the area of land that drains or sheds water into a specific receiving water body, such as a lake or a river. As rainwater or melted snow runs downhill in the watershed, it collects and transports sediment and other materials and deposits them into the receiving water body.

Watershed management is the process of implementing land use practices and water management practices to protect and improve the quality of the water and other natural resources within a watershed. This is done by managing the use of those land and water resources in a comprehensive manner.

### **Steps in Watershed management**

#### **1. Familiarize Yourself with Your Watershed**

Inventory and map the resources in the watershed;

Inventory and map the natural and manmade drainage systems in the watershed;

Inventory and map land use and land cover;

Inventory and map soils;

Identify areas of erosion, including stream banks and construction sites;

Identify the quality of water resources in the watershed as a baseline; and

Inventory and map pollution sources, both point sources (such as industrial discharge pipes) and nonpoint sources (such as municipal stormwater systems, failing septic systems, illicit discharges).

#### **2. Build Local Partnerships**

Local partnerships can include:

- Residents;
- Landowners;
- Federal, state, and municipal government officials;
- Watershed associations and other environmental and civic groups;
- Local business and industry leaders;
- Agricultural users;
- Developers;
- Teachers; and
- Recreational users.

### **3. Determine Priorities for Action**

Examples of opportunities to reduce pollution and address other wide-ranging environmental issues include:

- Infrastructure improvements. More frequent maintenance of municipal stormwater systems or improving or replacing inadequate stormwater treatment systems, identifying and eliminating illicit (i.e., non-stormwater) connections to municipal stormwater systems;
- Reducing paved areas and other impervious cover, especially adjacent to waterbodies and wetlands.
- Identifying appropriate areas for open space acquisition, greenways planning, and the establishment of vegetated buffers along waterbodies and wetland areas;
- Establishing sewer avoidance areas to limit development;
- Increasing inspections and maintenance of existing septic system and encouraging repairs to failing systems;
- Identifying other appropriate housekeeping practices for homeowners and landowners
- Identifying resource and wildlife habitat restoration priorities;

### **4. Conduct Educational Programs**

The degree of public education and participation in the planning process can greatly influence the success of watershed management. There are many ways to involve and educate the public in watershed management.

Outreach and education efforts can include:

- Periodic informational meetings;
- Stream walk assessments;
- Organized storm drain stenciling projects;
- Watershed clean-up days
- Coordination with school systems within the watershed;
- Information kiosks and websites;
- Videos; and
- Newsletters and other printed materials to provide status and progress reports.

### **5. Ensure Implementation and Follow-up**

It is important to establish a schedule with milestones and some sort of committee to ensure that projects proceed in a timely manner. A monitoring program should also be established to measure success through data gathering. It is also important to identify ways in which landowners can be assisted with undertaking necessary improvements, such as low interest loans or technical outreach information.

## **6. Wasteland Reclamation**

Wastelands are lands which are unproductive, unfit for cultivation, grazing and other economic uses due to rough terrain and eroded soils. The lands which are waterlogged and saline are also termed as wastelands. The loss of fertility followed by erosion also leads to the conversion of marginal forest lands into wastelands.

### **Classification of Wastelands:**

The wastelands are broadly classified into two categories:

#### **1. Barren and uncultivable wastelands:**

These lands cannot be brought under cultivation or economic use except at a very high cost, whether they exist as isolated pockets or within cultivated holdings. Such lands are sandy deserts, gully land, stony or leached land, lands on hilly slopes, rocky exposures etc.

#### **2. Cultivable wastelands:**

These lands are not cultivated for five years or more. It consists of lands available for cultivation, but not used for cultivation. Next to fallow lands, cultivable wastelands are important for agricultural purposes, because they can be reclaimed through conservational methods for cultivation, grazing or Agroforestry.

### **Reclamation of Wastelands:**

The different methods used for the reclamation of wastelands are:

1. These lands can be brought under cultivation by using excess water and fertilizers.
2. Afforestation and agronomical methods are used to conserve the soil, which help us to use it for agriculture.
3. Contour bunds are constructed which afford safe disposal of water of the catchment areas.
4. These lands can be used for settling the landless agricultural laborers.



## **7. Role Of Information Technology In Environment And Human Health.**

Information technology has tremendous potential in the field of environment education and health as in any other field like business, economics, politics or culture. Development of internet facilities, Geographic Information System (GIS) and information through satellites has generated a wealth of up-to-date information on various aspects of environment and health.

A number of software have been developed for environment and health studies which are user friendly and can help an early learner in knowing and understanding the subject.

### **(a) National Management Information System (NMIS):**

NMIS of the Department of Science and Technology has compiled a database on Research and Development Projects along with information about research scientists and personnel involved.

### **(b) Environmental Information System (ENVIS):**

The Ministry of Environment and Forests, Government of India has created an information System called Environmental Information System (ENVIS). With its headquarters in Delhi, it functions in 25 different centres all over the country. The ENVIS centres work for generating a network of database in areas like pollution control, clean technologies, remote sensing, coastal ecology, biodiversity, western Ghats and eastern environmental management, media related to environment, renewable energy, desertification, mangroves, wildlife, Himalayan ecology, mining etc.

### **(c) Remote Sensing and Geographical Information System (GIS):**

We are able to gather digital information on environment aspects like water logging, desertification, deforestation, urban sprawl, river and canal network, mineral and energy reserves and so on by the use of satellites.

### **(d) Geographical Information System (GIS):**

GIS has proved to be a very effective tool in environmental management. GIS is a technique of superimposing various thematic maps using digital data on a large number of inter-related or inter dependent aspects. Several useful soft-wares have been developed for working in the field of GIS.

### **(e) The World Wide Web:**

With resource material on every aspect, class-room activities, and digital files of photos, power-point lecture presentations, animations, web-exercises and quiz has proved to be extremely useful both for the students and the teachers of environmental studies.

## **8. Issues Involved In Enforcement Of Environmental Legislations in India**

### **1. The precautionary principle:**

This principle has evolved to deal with risks and uncertainties faced by environmental management. Once a threat is identified, action should be taken to prevent or control damage even if there is uncertainty, about whether the threat is real. Some environmental problems become impossible or costly to solve if there is delay, therefore waiting for research and legal proof is not costless.

### **2. The polluter-pays principle:**

This principle implies that a polluter pays for the damage caused by a development and also pays for monitoring and policing. It is more a way of allocating costs to the polluter than a legal principle.

### **3. Freedom of information:**

Environmental planning and management is hindered if the public, NGOs or even official bodies are unable to get information. Many countries have now begun to release more information. But still many governments and multinational corporations fear that industrial secrets will leak to competitors if there is too much disclosure, and there are situations where authorities declare strategic needs and suspend disclosure.