UNIT 4

SOCIAL ISSUES AND THE ENVIRONMENT

From unsustainable to sustainable development:

Brundland commission describes sustainable development as the development that **meet needs of present generation without compromising ability of future generations to meet their own need**

Dimensions of sustainable development

Derived from interactions between society, economy and environment.

Aspects of sustainable development

- Inter-generational equity - states to hand over safe, healthy & resourceful environment to future generation
- Intra-generational equity - Technological development of rich countries should support the economic growth of poor countries.

Approaches for sustainable development

- Developing appropriate technology - locally adaptable, eco-friendly, resource efficient and culturally suitable.
- Reduce, reuse, recycle [3R] approach – reduces waste generation and pollution
- Providing environmental education and awareness – changing attitude of the people
- Consumption of renewable resources – attain sustainability
- Conservation of non renewable resources – conserved by recycling and reusing
- Population control.

Urban problems related to energy:

Urbanization:

Movement of human population from rural areas top urban areas for betterment of education, communication, health, employment etc

Causes:

Cities are main centers of economic growth, trade, transportation, education, medical facilities and employment

Urban sprawl:

Urban growth is fast, so difficult to accommodate with their limited area .So cities spread in to rural areas

Urban energy requirement:

Residential and commercial lighting, Public and private transportation, Electrical and electronic appliances like A/C, fridge, washing machine, water heater etc

Solution:

- Use public transport instead of motor cycles

- Energy consumption must be minimized
- Use solar and wind energy
- Impose strict laws, penalty, and energy audit

Water conservation:

Process of saving water for future utilization

Need for water conservation:

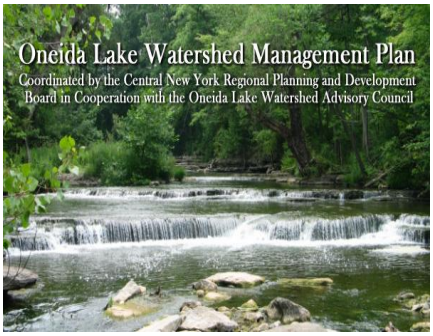
- Population increases water requirement also increases
- Due to deforestation annual rainfall decreases
- Over exploitation of ground water
- Population increases water requirement also increases
- Due to deforestation annual rainfall decreases
- Over exploitation of ground water
- Changes in environmental factors
- Better lifestyles need more water
- Increase in population
- Deforestation decreases annual rainfall
- Over exploitation of ground water leads to drought
- Agricultural and industrial activities require more water.

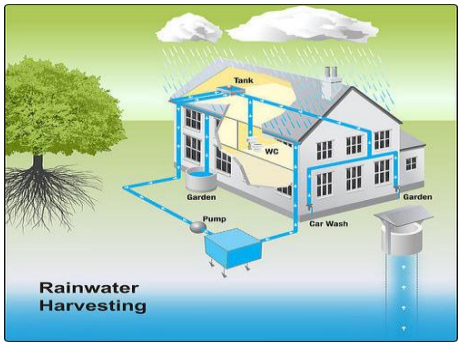
Strategies of water conservation

- **Reducing evaporation losses** → can place asphalt below the soil surface
- **Reducing irrigation losses** → sprinkling, drip irrigation, irrigation in early Morning / later evening reduces evaporation
- **Re use of water** → treated waste water from washings, bathrooms can be used for gardening
- **Preventing of wastage of water** → closing taps when not is use, repairing leakage, using small capacity taps etc
- **Decreasing run-off losses** → Can be done by using contour cultivation or terrace farming
- **Avoid discharge of sewage**. → discharge of sewage into water resources should be prevented

Water conservation method

- Rain water harvesting
- Watershed management





Rain water harvesting Objective:

- To meet increasing demands of water
- Raise water table by recharging ground water
- Reduce ground water contamination from salt water intrusion

- Reduce the surface run off loss & soil erosion
- Increase in hydro static pressure.
- Minimise water crisis & water conflicts

Roof top rainwater harvesting

- Method of collecting rainwater from roof of the building & storing it in the ground for future use.
- Involves collecting water that falls on roof of house
- Rainwater from roof top, road surface, play ground diverted to surface tank
- Rain water is collected by PVC / aluminium pipe to the pit
- The pit base is filled with stones & sand, which serve as sand filters

Advantages of rainwater harvesting

- Increases the well water availability & Reduces the use of current
- Prevent drought
- Increase the water level in well & Rise in ground water level
- Minimize soil erosion & flood hazards
- Upgrading the social & environmental status
- Future generation is assured of water.

Watershed management:

It is defined as land area bounded by divide line from which water drains under influence of gravity in to stream, lakes, reservoir.

Eg. Pits, dams, Farm, ponds etc

Watershed Management;

The management of rainfall & resultant runoff.

Objectives

- To minimize of risk of floods & For improving the economy
- For developmental activities
- To generate huge employment opportunity
- To promote forestry & to protect soil from erosion**.**

Watershed management Techniques

- Trenches (Pits) – Pits at regular intervals improves ground water storage
- Earthen dam – to check and store runoff water – should be constructed in catchment area
- Farm pond - Ponds can capture, store, and distribute water for a variety of agricultural purposes.
- Underground barriers (Dykes)




Maintenance of Watershed

- Water harvesting
- Afforestation
- Reducing soil erosion
- Scientific mining & Quarrying
- Public participation & Minimizing livestock population

Advantages of Watershed projects-

Improved access to drinking water in project areas during drought-

- Increase in cultivation area leading to increase in employment-
- Increase in crop yield, resulting better income to rural population-
- Improved availability of fodder for animals and increase in milk yield
- Increase in employment & involvement of women-
- Increase in net returns from all crops
- Decrease in soil erosion.
- Restoration of ecological balance.

Resettlement and Rehabilitation of people:

Resettlement – simple relocation or displacement of human population.

Causes

- Due to Developmental activities - dams, mining, roads, airports, etc
- Due to Disaster (Natural disaster - earthquake, floods, droughts, landslides, avalanches, volcanic eruptions etc.) (Manmade disasters - Industrial accidents, nuclear accidents, dam bursts etc)
- Due to conservation initiatives - national park, sanctuary, forest reserves, biosphere reserve etc.




Case Studies Eg. Hirakund dam displaced more than 20000 people residing in about 250 villages.

Tehri Dam (Uttaranchal) on the river Bhagirathi, would directly have an immediate impact on the 10,000 residents of Tehri town and the rehabilitation over here has become much more of a burning issue

Sardar Sarover Project - Plans to build 30 big, 135 medium and 3000 minor dams on Narmada River. Tributaries estimated to submerge 573 villages consisting of about 3 lakh people.

Rehabilitation:

Involves making the system to work again by replacing the lost economic assets, employment, land for building, repair damaged building etc.

Rehabilitation issues

- Displacement of tribal's increases poverty by losing home, land, jobs, food security etc
- Breakup of families
- Communal ownership of property
- Vanishing social and cultural activities like folk songs & dances
- Loss of identity between the people.
- Extinction of wild life

ENVIRONMENTAL ETHICS:-

Over exploitation of forests, land, water as well as various living components of biosphere and failure to tackle the problem of pollution and environmental degradation are exposing the humanly to the thread of a global environment crisis.

Therefore human beings are ethically responsible for the preservation of the world's ecological integrity. The environment ethics literally means conscious efforts to protect environment and to maintain its stability from the pollutants. Following are some of the ways to safeguard environment.

Function of Environment

- A life supporting medium for all organisms
- It provides food, air, water, & other natural resources
- Moderates the climatic conditions &Disintegrates the waste discharged by the society
- Healthy economy depends on healthy environment.

Ethical Guidelines

- Love & honor the earth
- Should be grateful to plants & animals
- Should not waste your resources
- Should not steal from future generation
- Should not pollute & hold other living things
- Should not consume more materials
- Should share the precious earth resources

Green House Effect and Global Warming:

The progressive warming of earth surface due to blanketing effect of man made CO2 in the atmosphere is green house effect.

Green house gases - causing global warming are CO2, CH4, N2O, CFCs. CO2 is the most important green house gas.

Human activities increase the green house effect & raise the atmospheric temperature & this is called global warming.

Causes:

Over the last century, the level of carbon dioxide in the atmosphere has increase by 25%, the level of nitrous oxide by 19% and the level of methane by 100%. These 3 major global warming gases are released into the atmosphere. by burning of fossil fuels, industrialization, mining, deforestation, exhaust from increasing

automobiles and other anthropogenic activities.

Effect on global warming

1. **Sea level →** glacial melting & thermal expansion of ocean raise the sea level
2. **Agriculture and forestry →** Climatic pattern shifts, rainfall is reduced, soils are dried, result in drought, less crop production
3. **Water resources →** Rainfall pattern change, Drought & Floods will become common. Rise in temperature will increases water demand
4. **Terrestrial ecosystems →** Animals & plants will have problems in adapting. They will be in Risk of extinction
5. **Human health →** As earth become warmer, floods & droughts become frequent.
   This increase waterborne disease, infectious diseases caused by mosquitoes.

Preventive Measures of Global Warming:

- Reducing CO2 emission by reducing use of fossil fuels
- Utilizing renewable resources like wind, solar, hydro power etc.
- Plant more trees
- Adopt sustainable agriculture.
- Use natural gas instead of coal
- Stabilize population growth
- Remove CO2 by photosynthetic algae.

Principles of Green Chemistry

Definition - Green chemistry is the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances. Green chemistry applies across the life cycle of a chemical product, including its design, manufacture, use, and ultimate disposal. Green chemistry is also known as sustainable chemistry.

1. ***Prevent Waste*** It is better to prevent waste than to treat or clean up waste after it has been
2. ***Atom Economy*** Synthetic methods should be designed to maximize the incorporation of all materials used in the process into the final product
3. ***Use and production of Less Hazardous chemical***
4. ***Designing safer chemicals*** - Chemical Product should be designed to preserve the efficiency of the function with less toxicity
5. ***Minimize the use of solvents and auxiliaries*** - Solvent Selection
6. ***Design for Energy Efficiency*** - Use of renewable Energy Sources
7. ***Use of renewable Feed stock***. A raw material or feedstock should be renewable rather than depleting whenever technically and economically practical.
8. ***Reduce Derivatives*** Unnecessary derivatization.
9. ***Catalytic reagents*** are superior to stoichiometric reagents. • Reduces energy • Increases efficiency • Reduces by-product formation Design for Degradation
10. ***Design for degradation*** - Design it so that it breaks down at the end of its useful lifetime.
11. ***Real-time analysis for Pollution Prevention*** Analytical methodologies need to be further developed to allow for real-time in-process monitoring and control prior to the formation of hazardous substances.

12. ***Inherently Safer Chemistry for Accident Prevention*** - Substances and the form of a substance used in a chemical process should be chosen so as to minimize the potential for chemical accidents, including releases, explosions, and fires.

Climate change

What is climate change?

- Climate change is the rise in average surface temperatures on Earth, mostly due to the burning of fossil fuels.
- Climate change, also called global warming, refers to the rise in average surface temperatures on Earth.
- An overwhelming scientific consensus maintains that climate change is due primarily to the human use of fossil fuels, which releases carbon dioxide and other greenhouse gases into the air.
- The gases trap heat within the atmosphere, which can have a range of effects on ecosystems, including rising sea levels, severe weather events, and droughts that render landscapes more susceptible to wildfires.

Kyoto Protocol

- 1997, Kyoto, Japan → developed countries agreed to specific targets for cutting their emissions of greenhouse gases
- Industrialized countries committed to an overall reduction of emissions of greenhouse gases to 5.2% below 1990 levels for the period 2008 - 2012
- Objective is the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system

ACID RAIN

- Normal rain is slightly acidic due to CO2 gas.
- The pH of the rain water is further acidic due to SO2 & NO2 gases.
- This type of precipitation of water is called acid rain.

Formation of Acid rain:

Thermal power plants, industries,& vehicles release nitrous oxide & sulphur dioxide into atmosphere
When these gases react with water vapour they form acids

$SOx + H_2O \rightarrow H_2SO_4$

$NOx + H_2O \rightarrow HNO_3$

Effects of acid rain

1. **On Human beings**
   Destroy life – nervous, respiratory and digestive system
   Causes premature death from heart and lung disorders like asthma & bronchitis.
2. **On Buildings**
   Taj Mahal in Agra suffer due to H_2SO_4 acid fumes released from Mathura refinery.
   British Parliament building suffered due to H_2SO_4 rain
   Acid rain reduce the value of building, bridges, cultural objects etc.
   This increases the maintenance cost.
3. **On terrestrial and Lake Ecosystem**

Reduces rate of photosynthesis, growth of crops, Fish population.
Flies, mosquitoes & worm occur on the dead fishes
Nitrogen, & phosphorous stay up in dead wastages.
Biomass production is reduced & fish population decreases.

Control measures

- By Clean combustion technologies
- Using pollution control equipments
- Replacement of coal by natural gas
- Liming of lakes and soils.
- Coal with lower sulphur content can be used
- Emission of SO2 & NO2 from industries can be reduced

Ozone layer depletion:

Ozone is an important chemical species present in the stratosphere. Its concentration is about 10ppm. It acts as a protective shield for the life on the earth. It protects us from the Ultraviolet radiation of the sun. Ozone is produced and also broken down by photochemical reactions, thus maintaining equilibrium. Recent evidence shown that ozone layer is becoming thinner & holes have developed

Causes for ozone layer depletion:

1. Chlorine released from CFC and Bromine released from halogens are the most important chemicals associated with ozone layer depletion
2. The halogens are used in fore extinguishers and CFC are extensively used in air conditioners and refrigerators.
3. Methyl bromide used during packaging of fruits to prevent bacterial action flows out into the atmosphere as soon as the packing is opened. This cause heavy damage to ozone.

Ozone depleting chemicals

- Chloro Fluro carbon (CFC) - Used in refrigerators, propellent, spray cans, blowing agent, foam agent],
- Hydro chloro fluoro carbon (HCFC) - Used in refrigerants, blowing agents
- Bromo fluoro Carbon (BFC) - Used in fire extinguisher

Formation of Ozone:

$O2 + h\nu \rightarrow O^{\bullet} + O^{\bullet}$ Ozone is formed by photochemical reaction

$O^{\bullet} + O2 \rightarrow O3$ atomic oxygen reacts with molecular oxygen to form ozone

Mechanism of Ozone layer depletion:

$CF_2Cl_2 + h\nu \rightarrow Cl + CF_2Cl$

$CF_2Cl + O_2 \rightarrow CF_2O + ClO$

$Cl + O_3 \rightarrow ClO + O_2$

$ClO + O^{\bullet} \rightarrow Cl + O_2$

- In 1970 it was found that ozone layer was attacked by CFCs
- Each Chlorine atom attack ozone molecule.
- Loss in ozone increases the UV radiation reaching the earth surface.

Effects:

1. Marked rise in cause skin cancer
2. Damage immune system
3. Eye ailment such as cataract
4. Shorter life of paints and plastics
5. Restricted growth and crop damage
6. Destruction of aquatic life

Control Measures

- Replacing CFCs by less damaging materials
- Use of methyl bromide – crop fumigant should be controlled
- Manufacturing & using of ozone depleting chemicals should be stopped.

NUCLEAR ACCIDENTS & HOLOCAUST

The release of large amounts of nuclear energy and radioactive products into the atmosphere.

Types of Nuclear Accidents

- Nuclear test
- Nuclear power plant accidents
- Improper disposal of radioactive wastes
- Accident during transport of materials
- Core melt down

Effects of nuclear accident:

1. Direct contact leads to radioactive sickness which may lead to death.
2. Cancer is major problem in affected areas and this effect may stay longer.
3. Air and water will be contaminated due to radioactive steam and groundwater mixing with radioactive substances.
4. Land degradation.
5. It affects eye sight.
6. The ecological system gets disturbed.
7. Birds and animals have affect on their reproductive systems.
8. Gene disturbances and deformity in newly born.

Examples

Chernobyl Nuclear Disaster:(Nuclear Pollution)

In April 26 1986, melt down of the Chernobyl nuclear reactor in Ukraine, Russia, has leaked out the radioactive rays & radioactive materials. This was happened due to poor reactor design & human error.
Effects: about 2000 persons died, more suffered due to degeneration of cells, severe bleeding, anaemia,

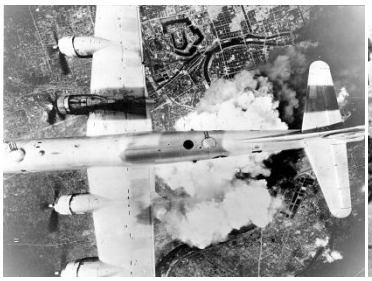
skin cancer, animals plants was also affected more.

2. Nuclear holocaust in Japan:

In 1945 two nuclear atom bombs were dropped on Hiroshima & Nagasaki cities in Japan.
This explosion emitted neutrons, gamma radiations, strontium (Sr*90)
This Sr90 has the property of replacing calcium in the bones & so many people were affected by bone deformities
1, 00,000 people were killed,

Effects of nuclear holocaust:

Nuclear winter [Black soot formed will absorb all UV-radiations & prevent UV radiation to reach the earth.
This result in cooling effect & water evaporation will also reduce. This process opposite to global warming is called nuclear winter.

Control Measures

- Suitable precautions to avoid accident
- Constant monitoring of the radiation level
- Checks and control measures done by Atomic Energy Regulatory Board

WASTE LAND RECLAMATION:

The land which is not in use – unproductive, unfit for cultivation another economic uses. The waste land do not fulfill their life sustain potential wasteland contributes about 20.17% of the total geographical area of India.

Types of waste land

1. **Uncultivable waste land** – Barren rocky areas, hilly slopes, sandy deserts.
2. **Cultivable waste land**- degraded forest lands, gullied lands. Marsh lands, saline land etc.

Causes for waste land formation

- Soil Erosion, Deforestation, Water logging, Salinity.
- Excessive use of pesticides.
- Developmental activities, [Construction of dams, power projects, causes water logging].
- Over-exploitation of natural resources.
- Sewage and industrial wastes.
- Mining destroy forests & cultivable land.
- Growing demands for fuel, fodder, wood and food causes degradation and loss of soil productivity.

Objectives of waste land reclamation

- To improve the physical structure and quality of the soil
- To prevent soil erosion

- To avoid over – exploitation of natural resources
- To conserve the biological resources.
- To improve the availability of good quality of water
- To supply fuel, fodder, timber for local use
- To provide source of income to the rural poor

Methods of waste land reclamation

- Drainage
- Leaching
- Irrigation practices
- Green manures and bio fertilizers
- Application of Gypsum
- Afforestation programmes

Consumerism and Waste Products

Consumerism refers to the consumption of resources by the people. Early human societies used to consume much less resources. But the consumerism has increased to a very large extent. Consumerism is related to both population size and increase in demands due to change in lifestyle.

Population has increased tremendously. World Bank estimates our population to reach 11billion by 2045. Two types of conditions of population and consumerism exists.

1. People over – population: When there are more people than available food, water and other resources in an area – causes degradation of limited resources – poverty and under nourishments. Low Developed Countries (LDC) are more prone to these conditions. There is less per capita consumption although the overall consumption is high.

2. Consumption over– population:

These conditions occur in more developed countries (MDC). Population size is smaller but the resource consumption is high due to luxurious lifestyle (i.e.) per capita consumption is high. More consumption of resources lead to high waste generation –greater is the degradation of the environment.

Objectives of Consumerisation

- Improves rights and power of the buyers
- Making the manufacturer liable
- Reuse and recycle the product
- Reclaiming useful parts
- Reusable packing materials
- Health and happiness.

Important information to be known by buyers

- About ingredients,
- Manufacturing dates, Expiry date, etc.

SOURCES OF WASTES = Glass, papers, garbage's, food waste, automobile waste, dead animals etc.

E – Waste = Computers, printers, mobile phones, Xerox machines, calculators etc.

Effects of wastes -

- Dangerous to human life
- Degrade soil
- Non biodegradable plastics reduce toxic gases.
- Cadmium in chips, Cathode ray tube, PVC causes cancer and other respiratory problems. Overall environmental impact = no. of people x per capita use of resources x waste generated per unit of resources

Parameter	**MDC**	**LDC**
Number of people	Low	High
Per capita consumption of resources	High	Low
Waste generated	High	Low

Over all environmental impact of these two types of consumerism may be same or even greater in case of MDC.

Environment (Protection) Act, 1986

It is a general legislation law to rectify the gaps & laps in above acts.

This act empowers the Central Govt. to fix the standard of quality of air, water, soil & noise.

Objectives:

To protect & improvement of the environment

To prevent hazards to all living creatures & property

To maintain peaceful relationship between humans & their environment

Important Features of Environment Act:

- Empowers safeguard measures to Prevent accidents which cause pollution.
- Gives remedial measures if accident occurs.
- The Govt. has authority to close or prohibit or regulate any industry & its operation. One who violates the act will be punishable with fine up to one lakh
- If the violation continues, an additional fine of Rs. 5000/- per day is imposed
- The act empowers the officers of Central Government to inspect the site / plant / machinery for preventing pollution.
- Collects samples of air, water, soil or other material from any factory / its premises for testing.

Air (Prevention & Control of Pollution) Act, 1981 Salient features

- Enacted in the Conference held at Stockholm in 1972.
- Deals with problems related to air pollution, quality of air etc.

Objectives of air act:

To prevent, control & abatement of air pollution To maintain the quality of air

Important features of air pollution:

- The Central Board settle disputes between state boards, provide technical assistance & guidance to State board.
- The State Board verify the emissions of air pollutants from industrial / automobile units

- The State Board Collect information about air pollution
- SB examine the standards of manufacturing process & control equipment
- SB can advise State Government to declare the heavily polluted areas & advice to avoid burning of waste products.
- Operation of industrial unit is prohibited in a heavily polluted areas
- Violation of law is punishable with imprisonment & Fine

Water (prevention and control of pollution) Act 1974:

This act provides for maintaining & restoring the source of water Provides for preventing & controlling water pollution.

Objectives:

- To protect water from all kinds of pollution
- To preserve the quality of water
- Establishment of Central & State Boards for preventing water pollution
- Restrain any person for discharging sewage/effluent into any water body
- Any contravention of the standards leads to prison for 3 to 6 months
- Requires permission to set up an industry which discharges effluent.

State pollution Control Board:

- Take step to establish any industry, disposal system, extension/addition in industry, discharge of effluent into river
- Use any new / altered outlet for discharge of sewage
- Begin to make any new discharge of sewage.

Punishment:

Stoppage of supply of electricity, water / any other services Imprisonment for 1½ years to 6 years & Rs. 5000/- fine.

Wildlife [protection] act, 1972:

Aimed protect & preserve wildlife. Wildlife refers to all animals & plants
It is declining due to human actions for wildlife's skins, furs, feathers, ivory etc.

Objectives:

To maintain ecological process & life supporting system To preserve biodiversity
To ensure a continuous use of species.

Important Features:

Covers the right & non-rights of forest dwellers
Provides restricted grazing in sactuaries & prohibits in national parks Prohibits the collection of non-timber forest.

1. Defines wild life related terminology.
2. Provide appointments of advisory Board, wildlife warden, their powers &
3. duties etc.

4. Prohibition of hunting of endangered species [was first] mentioned.
5. List of endangered species is provided.
6. Provides grants for setting up of national parks, wild life sanctuaries etc
7. The Act imposes ban on trade & commence of scheduled animals.
8. Provides legal proves to officers to punish the offenders.
9. Provide captive breeding programme for endangered species.

Forest (conservation) Act, 1980

It deals with conservation of forest and includes reserve forest, protected forest and any forestland irrespective of ownership.

Objectives:

To protect & conserve the forest

To ensure judicious use of forest products

Important Features of Forest Act:

Forests are not diverted without the prior permission of the Central Government.

Land registered for forest may not be used for non-forest purposes

Any illegal activity in a forest area can be stopped immediately

Clearance of forest land for re-afforestation is forbidden

One who violates the forest law is punishable.

1. Provision for conservation of all types of forests. Advisory committee appointed for funding conservation
2. Illegal non-forest activity within a forest area can be immediately stopped under this act. Non forest activity means clearing land for cash-crop agriculture, mining etc.

However construction in forest for wild life or forest management is exempted from non forestry activity.

1992 Amendment:

1. This amendment allows transmission lines, seismic surveys, exploration drilling and hydro electric project in forest area without cutting trees or with limited cutting of trees-prior approval CG to be sought.
2. Wild life sanctuaries, National parks etc. are prohibited from exploration except with CG prior approval.
3. Cultivation of coffee, rubber, tea (cash crop), fruit bearing trees, oil yielding trees, trees of medicinal values are also prohibited in reserved forest area with out prior approval from CG. Has this may create imbalance to ecology of the forest.
4. Tusser (a type of silk yielding insect) cultivation in forest area is allowed since it discourages monoculture practices in forests and improves biodiversity.
5. Plantation of mulberry for rearing silk worm is prohibited.
6. Proposal sent to CG for non-forestry activity must have a cost benefit analysis and environmental impact statement (EIS)

Environmental Legislation

1972 June 5th – Environment was first discussed as an agenda in UN conference on Human Environment. There after every year 5th June is celebrated as Environment Day.

Constitutional Provisions:

Added in 1976– Article 48A – "The state shall endeavor to protect and improve the environment and to safeguard forests and wildlife of the country"

Article 51A (g): "It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures".

By these two articles one constitution makes environment protection and conservation as one of our fundamental duties.

Central pollution control Board (CPCB):

1. Advices CG in matters – prevention and control of water pollution
2. Co ordinates SPCB and provide technical assistance and guidance
3. Training programs for prevention and control of pollution by mass media and other ways
4. Publishes statistical and technical details about pollution
5. Prepares manual for treatment and disposal of sewerage and trade effluents
6. Lays standard for water quality parameters
7. Plans nation-wide programs for prevention, control or abatement of pollution
8. Laboratories for analysis of water, sewage or trade effluents

State pollution control Board (SPCB):

SPCB has similar functions as SPCB and governed by CPCB

1. SPCB advises state government with respect to location of any industry that might pollute
2. Lays standard for effluents to take samples from streams, wells or trade effluents or sewage passing through an industry. Samples taken are analyzed at recognized labs. If the sample is not confirming to the water quality standard, then the unit is neglected
3. Every industry to obtain consent from PCB before commencing an effluent unit by applying in prescribed form with fee.

Enforcement of environmental legislation – major issues

1. Target of 33% of land to be covered by forest not achieved
2. Rivers turning to open sewers
3. Big towns and cities polluted
4. Wild life endangered
5. EFP (Effluent Treatment Plant) or Air Pollution Control devices are expensive – leads to closure of units. Government should provide subsidy for small units.
6. Pollution control laws not backed up by policy pronouncements or guidelines
7. Chairman of PCB – political nominee. Hence political interference.
8. Involving public in decision making envisaged by policy statement of the ministry of environment and forest (1992) is only in paper.

Draw backs of wild life (protection) act

- Fall out of Stockholm conference not localized Ownership certificate of animals article – illegal trading Trade through J & K. This act not applicable to J&K

- Offender to get just 3 years imprisonment and or Rs.25000/- fine.

Draw backs of the forest (conservation) act 1980

Inheritance of exploitative and consumerist elements of the British period Tribal people (i.e.) inhabitants of forest are left by the act

Instead of attracting public support (tribal) it has intrigued in the human rights.

Protection of trees, birds and animals have marginalized poor people.

PUBLIC AWARENESS

Our environment is presently degrading due to many activities like pollution, deforestation, overgrazing, rapid industrialization and urbanization.

Objectives of public awareness

- Create awareness among people of rural and city about ecological imbalances, local environment, technological development and various development plants.
- To organize meetings, group discussion on development, tree plantation programmes exhibitions.
- To learn to live simple and eco-friendlily manner.

Methods to create environmental awareness

- In schools and colleges
- Through mass – media
- Cinema
- Newspapers
- Audio - Visual media
- Voluntary organizations
- Traditional techniques
- Arranging competitions
- Leaders appeal
- Non – government organizations.