UNIT IV SOCIAL ISSUES AND THE ENVIRONMENT

From Unsustainable To Sustainable Development – Urban Problems Related To energy – Water conservation, Rain Water Harvesting, Watershed Management – Resettlement and Rehabilitation of People, Its Problems and Concerns, Case Studies – Environmental Ethics:- Issues and Possible Solutions – Climate Change, Global Warming, Acid Rain, Ozone Layer Depletion, Nuclear Accidents and Holocaust, Case Studies – Wasteland Reclamation – Consumerism and Waste Products – Environment Production Act – Air (Prevention and Control of Pollution) Act – Water (Prevention and Control of Pollution) Act – Wildlife Protection Act – Forest Conservation Act – Issues Involved in enforcement of Environmental Legislation – Public Awareness.

SOCIAL ISSUES AND ENVIRONMENT

Introduction:

From Unsustainable to Sustainable Development

Man is part of the nature and he is bound to obey the laws of nature. He depends on his environment for basic things. More developmental activities are adopted in order to increase the quality of life. For that he uses the available resources. The Earth has limited supply of resources and renewable resources. These are to be managed in a scientific manner for availing the generations to come. Hence developmental activities are to be taken with more care about the environment and its protection. It brings benefits to all not only to the present generation but also for future generations.

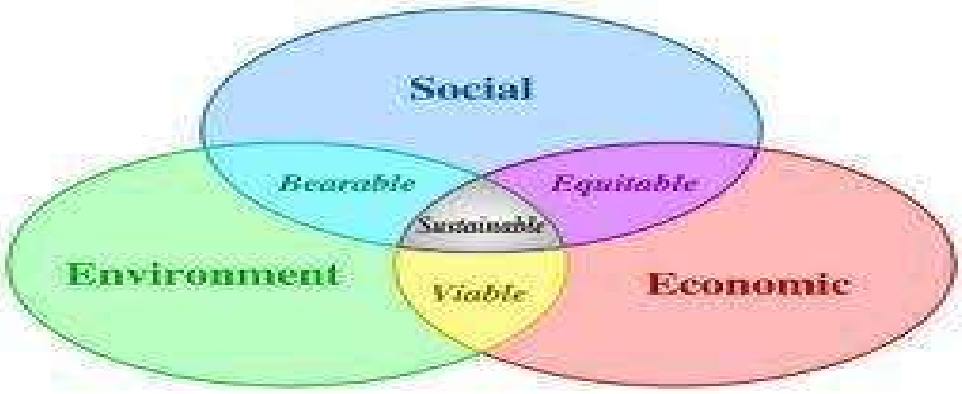
Sustainable development: Meeting the needs of the present without compromising the ability of future generation to meet their own needs.

Important components of Sustainable development:

1. Economic development

2. Community development

3. Environmental protection



True sustainable development aims at optimum use of natural resources with high degree of reusability, minimum wastage, least generation of toxic by-products and maximum productivity. Aspects of sustainable development:

Inter generational equity-It states stat we should hand over a safe, healthy and resourceful environment to future generation.

Intra generational equity:

A technological development of rich countries should support the economic growth of poor countries and help in narrowing the wealth gap and lead to sustainability.

Approaches for sustainable development:

1. Devloping appropriate technology-technology which is locally adoptable, ecofriendly, resource efficient and culturally suitable should be adopted. It uses local labour, less resources and produces minimum waste.
2. Reduce ,Reuse and Recycle (3Rapproach) –Optimum use of natural resources using it again and again instead of throwing it on wasteland or water and recycling the material in to further products. It reduces waste generation and pollution.
3. Providing environmental education and awareness-Thinking and attitude of people towards earth and environment should be changed by providing environmental awareness and education.
4. Consumption of renewable resources- It is very important to consume the natural resources in such a way that the consumption should not exceed the regeneration capacity.
5. Non-renewable resources should be conserved by recycling and reusing.
6. By population control we can make sustainable development.

Urban problems related to energy:

Urbanization –Movement of human population from rural; areas to urban areas for want of better education, communication, health, employment etc.

Causes:

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

Urban sprawl:

The phenomenon of spreading of the cities in to sub-urban or rural areas is called urban sprawl. Urban growth is so fast and is difficult to accommodate all commercial industrial residential and educational facilities within the limited area.

Energy demanding activities:

Urban people consume lot of energy and materials in comparison with rural people. This is because urban people have high standard of life and their life style demand more energy.

Examples for energy demands:

1. Residential and commercial lightings.
2. Industries using large proportion of energy.
3. Usage of fans fridge, A.C, washing machines.

Control and prevention of pollution technologies need more energy.

Solution for urban energy problems:

1. Energy consumption must be minimized in all aspects.
2. Public transportation should be used instead of motor cycles and cars.
3. Using of solar energy and wind energy.
4. Production capacity must be increased.

WATER CONSERVATION

The original source of water is precipitation from the atmosphere. The water available on the earth may occur in all three stages as gas, liquid or solid. Temperature is the main factor in deciding the state of water. As a liquid, the water forms hydrosphere. About 75% of the Earth's surface is covered by the hydrosphere.

The process of saving water for future utilization is called conservation of water.

Need for water conservation.

1. Better life style requires more fresh water.
2. Agriculture and Industrial activities require more fresh water.
3. As the population increases the requirement of water is also more .

Strategies of water conservation

Reducing evaporation losses

Evaporation of water in humid regions can be reduced by placing horizontal Barriers of asphalt below the soil surface.

Reducing irrigation losses

Sprinkling and irrigation conserves water by 30- 40%. Irrigation in early morning (or) later evening reduces evaporation losses. Growing hybrid crop varieties also conserve water.

Reuse of water

Treated waste water can be reused for irrigation. Water from washings, bath rooms etc. can be used for washing cars, gardening.

Preventing of wastage of water

Closing the taps when not in use and repairing any leakage from pipes.

Decreasing run off losses

Run off , on most of the soils can be reduced by using contour cultivation (or) Terrace farming.

Avoid discharge of sewage

Disposal into natural water resources should be avoided

Methods of water conservation

Rain water Harvesting and Watershed management

What is Water Harvesting

It means capturing rain where it falls or capturing the run off in your own village or town. And taking measures to keep that water clean by not allowing polluting activities to take place in the catchment.

Therefore, water harvesting can be undertaken through a variety of ways
Capturing runoff from rooftops

- Capturing runoff from local catchments
- Capturing seasonal floodwaters from local streams
- Conserving water through watershed management

These techniques can serve the following the following purposes:

- Provide drinking water
- Provide irrigation water
- Increase groundwater recharge
- Reduce stormwater discharges, urban floods and overloading of sewage treatment plants

In general, water harvesting is the activity of direct collection of rainwater. The rainwater collected can be stored for direct use or can be recharged into the groundwater. Rain is the first form of water that we know in the hydrological cycle, hence is a primary source of water for us. Rivers, lakes and groundwater are all secondary sources of water. In present times, we depend entirely on such secondary sources of water. In the process, it is forgotten that rain is the ultimate source that feeds all these secondary sources and remain ignorant of its value. Water harvesting means to understand the value of rain, and to make optimum use of the rainwater at the place where it falls.

Rainwater harvesting. It is a technique of collecting and storing rain water for use in non-monsoon periods. In the present age, concrete houses, well-built roads, footpaths and well –concreted courtyards have left few open grounds. With the decrease in natural forest cover, increase in concrete jungles and the decrease in exposed earth; very little open ground is left for water to soak in and thereby increase the ground water table. So, artificial recharging of the ground water is extremely essential. It is done through rain water harvesting. For the purpose, rain water is collected at the roof top or in an open well and then carried down for immediate use or it is directed into the aquifer.

Rain water harvesting techniques

There are two main techniques for rain water harvesting:

1. Storage of rain water on the surface for future use
2. Recharge of ground water

Recharge of ground water is a recent concept and the structures used for the purpose are:

- Pits
- Trenches

- Dug wells
- Hand pumps
- Recharge shaft
- Lateral shafts with bore wells
- Spreading technique

Objectives of rain water harvesting.

1. To raise the water table by recharging the ground water.
2. To minimize water crises and water conflicts
3. To reduce rain water run off and soil erosion.
4. To reduce the ground water contamination from intrusion of saline water

Concept of rain water harvesting

Rain water harvesting involves collecting water that falls on roof of house during Rain and conveying water through PVC or Al pipe to a near by covered storage tank.

Method of rain water harvesting

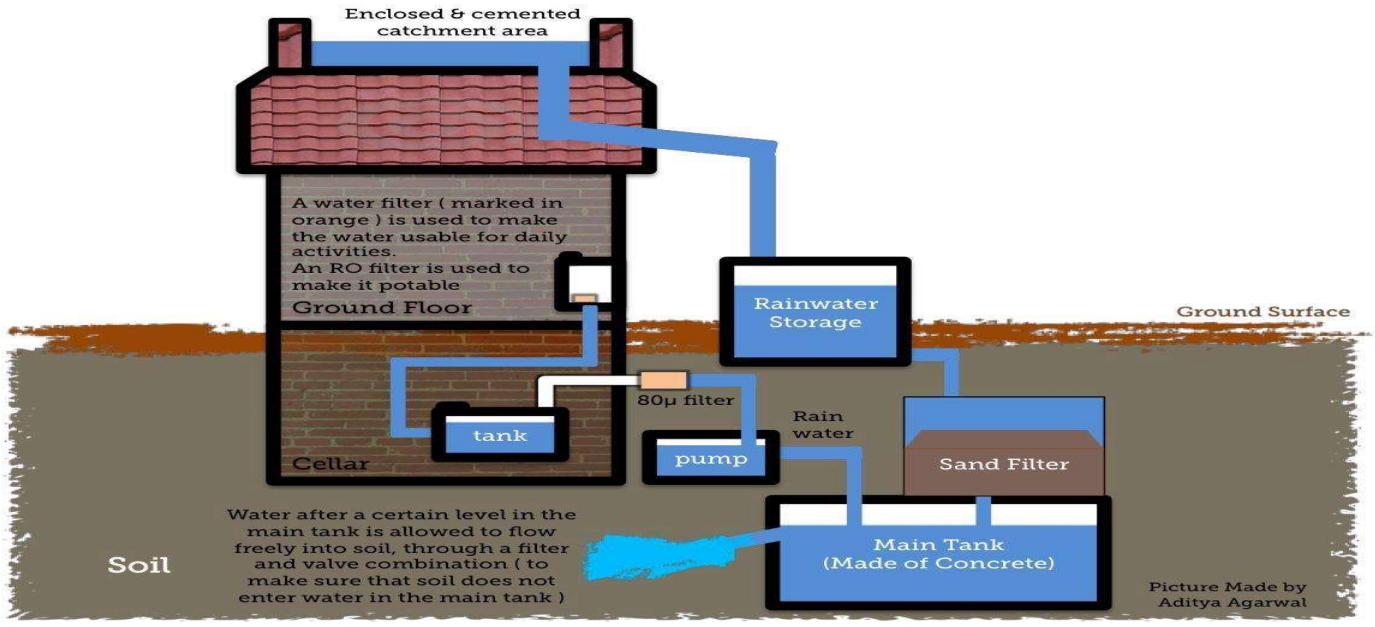
1. Roof top method: collecting rain water from roof of the building and storing in the ground. It is the low cost and effective technique for urban houses and buildings.

2. The rain water from roofs, road surfaces, play grounds is diverted into the surface tank or recharge pits. The pit base is filled with stones and sand which serves as a

Advantages:

Rise in ground water level and minimizing the soil erosion and flood Hazards. Scarcity of water is reduced.

Rainwater harvesting systems channel rainwater that falls on to a roof into storage via a system of gutters and pipes. The first flush of rainwater after a dry season should be allowed to run to waste as it will be contaminated with dust, bird droppings etc. Roof gutters should have sufficient incline to avoid standing water. They must be strong enough, and large enough to carry peak flows. Storage tanks should be covered to prevent mosquito breeding and to reduce evaporation losses, contamination and algal growth. Rainwater harvesting systems require regular maintenance and cleaning to keep the system hygienic.



WATERSHED MANAGEMENT

Water shed (or) drainage basin: It is defined as land area from which water drains under the influence of gravity into stream, lake, reservoir (or) other body of surface water. Watershed management of rain fall and resultant run off is called watershed management.

Factors affecting watershed :

1. Overgrazing . deforestation , mining , construction activities affect and degrade watershed.
2. Droughty climate also affects the water shed.

Need or objectives of watershed management

1. To raise the ground water level.

2. To protect the soil from erosion by run off.

3. To minimize the risks of floods, drought and landslides.

4. To generate huge employment opportunities in backward rain fed areas to ensure security for livelihood.

Watershed management techniques

Trenches (pits) were dug at equal intervals to improve ground water storage. Earthern dam or stone embankment must be constructed to check run off water.

Farm pond can be built to improve water storage capacity of the catchment's area.

Maintenance of watershed

Water harvesting: Proper storage of water in water shed can be used in dry season In low rainfall areas.

Afforestation and agro-forestry help to prevent soil erosion and retention of moisture in watershed areas

Reducing soil erosion: Terracing, contour cropping minimize soil erosion and run off on the slopes of water sheds

Scientific mining and quarrying minimize the destructive effect of mining in water shed areas **Public participation** is essential for water shed management. People should be motivated for maintaining water harvesting structures implemented by the government.

RESETTLEMENT & REHABILITATION

Based on the resettlement schemes proposed by each affected village and present policies, laws and regulations of different levels of governments and the resettlement requirements of ADB, the Resettlement Plan of Lauding Expressway Project was prepared by PPTA consulting team and the staff from NPAEC under GPCD assisted by design institute and Local County and township governments.

Target and Task

The overall objective of resettlement and rehabilitation is to ensure that the affected production base will be restored, the affected labor force will be re-employed, and income and livelihood of affected people will be improved or at least restored to their previous levels before resettlement.

At present, the rural population of project impact area is mainly engaged in agricultural actives, with most of their income coming from planting, economic trees, and animal husbandry. According to the actual production and living standard among affected villages, and the approved economic and social development plans for the relevant counties, the target of

Resettlement and rehabilitation is set as follows:

(1) The resettle's grain production level will be self-sufficient after resettlement.

(2) The income per capita shall be recovered to the standard before resettlement.

(3) The affected public infrastructures, school, hospitals, social welfare level, natural environment and traffic condition etc. shall be improved after resettlement.

Resettlement Task

In 2005, there were 2,829 households with 13,149 persons to be resettled or rehabilitated, in which 520 households and 2,352 persons will need house relocation.

The basic resettlement policy of Lauding Expressway Project is to respect the wishes of affected People and maintain their current production and living traditions. Based on consultation of local affected peoples, the economic rehabilitation will be based on developing replaced farming Resources within their own townships and villages. Planting will be the focus of economic Rehabilitation strategy by developing new farmland and improving the remaining farmland in the affected villages, and supplemented by developing various other income generation opportunities in the project areas. In other words, the resettlement and rehabilitation strategy will first to reestablish the physical production bases for the affected persons, which will provide a long-term development potential by fully utilizing local land resources.

Resettlement Principle

Under such policy, a number of resettlement and rehabilitation principles have been developed for the Project.

(1) The resettlement plan will be based on detailed inventory for land acquisition and houses Demolition, and adopted compensation standards and subsidies.

(2) The resettlement shall be combined with the local development, resource utilization and Economic growth as well as environment protection. Considering the local conditions, a Practical and feasible resettlement plan should be developed to restore or improve their Economic production and create basic conditions for long-term development.

Overall Scheme of Resettlement

Since the construction of Lauding Expressway Project will only acquire limited land acquisition and demolition along the road alignment line, it will not have significant negative impacts on production and livelihood for most affected villages. A series of consultation meetings were held among affected villages and townships. According to the resettle's opinion and suggestion, and combined with the actual condition of affected area, the basic rehabilitation scheme was determined as follows:

(1) Project affected persons will be resettled within their original villages and village groups, so
that their way of production, living and social relationship can be maintained, which will be beneficial for them to restore or improve their production and income level after resettlement.

(2) In order to reduce the impacts on the production and livelihood among resettle's, the demolished houses will be dismantled after the new houses built. The reconstruction of houses will adopt two approaches. For most relocated households, they will choose to rebuild their houses by themselves, and all salvage materials will belong to them. The second approach is for those who live near towns, their rehabilitation will be carried out by local government in order to promote small town development and save farmland.

(3) The rural relocated households will be resettled in their original villages. For those who lose
Some farmland, the land-based rehabilitation will be adopted with a combination of developing new farmland, redistributing remaining farmland and receiving their share of resettlement subsidy among affected village groups.

Environmental Ethics

It refers to issues, principles and guidelines related to human interactions with their Environment. **(OR)**

Ethics is a branch of philosophy. It deals with morals and values. An ethic is a principle or value that we use to decide whether an action is good or bad.

Ethics differs from country to country.

Functions of Environment:

1. It moderates climate conditions of the soil.

2 A healthy economy depends on healthy environment. 3It is the life supporting medium for all organisms.

3. It provides food , air , water and other important natural resources to the human beings Environmental problems : Deforestation activities , population growth and urbanization water Pollution due to effluents and smoke from industries, Scarcity.

Solution to environmental problems:

Reduce the waste matter and energy resources.

Recycle and reuse as many of our waste product And resources as possible. Avoid over exploitation of natural resources.

Minimse soil degradation and Protect the biodiversity of the earth. Reduce population and increase the economic growth our country.

Ethical guidelines on environmental protection:

1. The earth is the habitat of all living species and not of human beings alone.
2. Natural resources and energies are depleting fast. We must protect them.
3. Involve yourself in the care of the earth and experience nature.
4. Respect nature, you are a part of it.
5. Think of the global cause and act for local protection
6. Keep yourself informed about ecological changes and developments.
7. Observe austerity, reserve scarce resources for the future and the future generations.
8. We must be cooperative, honest, affectionate and polite to society and nature.

CLIMATE:

It is the average weather of an area. It is the general weather condition, seasonal variations of the region. The average of such conditions for a long period is called climate.

Causes of climate changes:

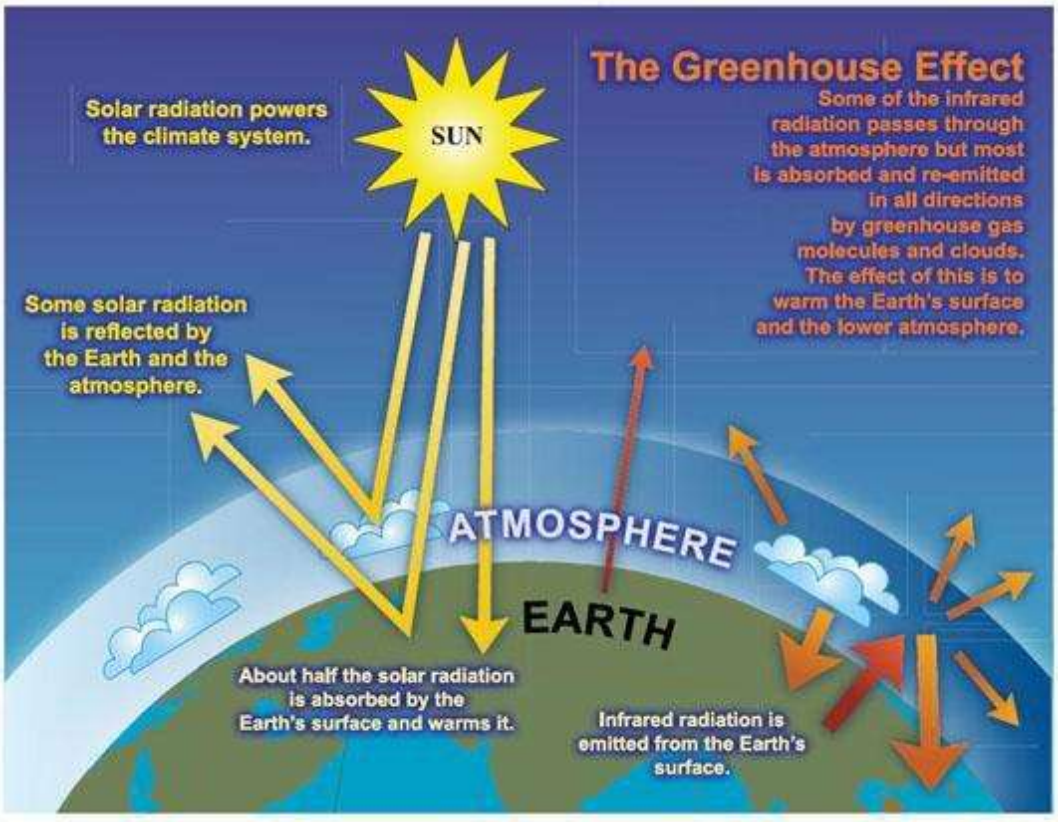
1. Presence of green house gases in the atmosphere Increases the global temperature.
2. Depletion of ozone layer increases the global temperature.

Effects of climate change:

1. Small climate changes disturb agriculture which leads To migration of animals and human.
2. Climate change may upset hydrological cycle which results in floods and droughts in different parts of the world.
3. Global pattern of winds and oceans currents also gets disturbed by climate change.

Green house effect: Green house gases are CO_2, Methane .Nitrous oxide NO_2, CFC

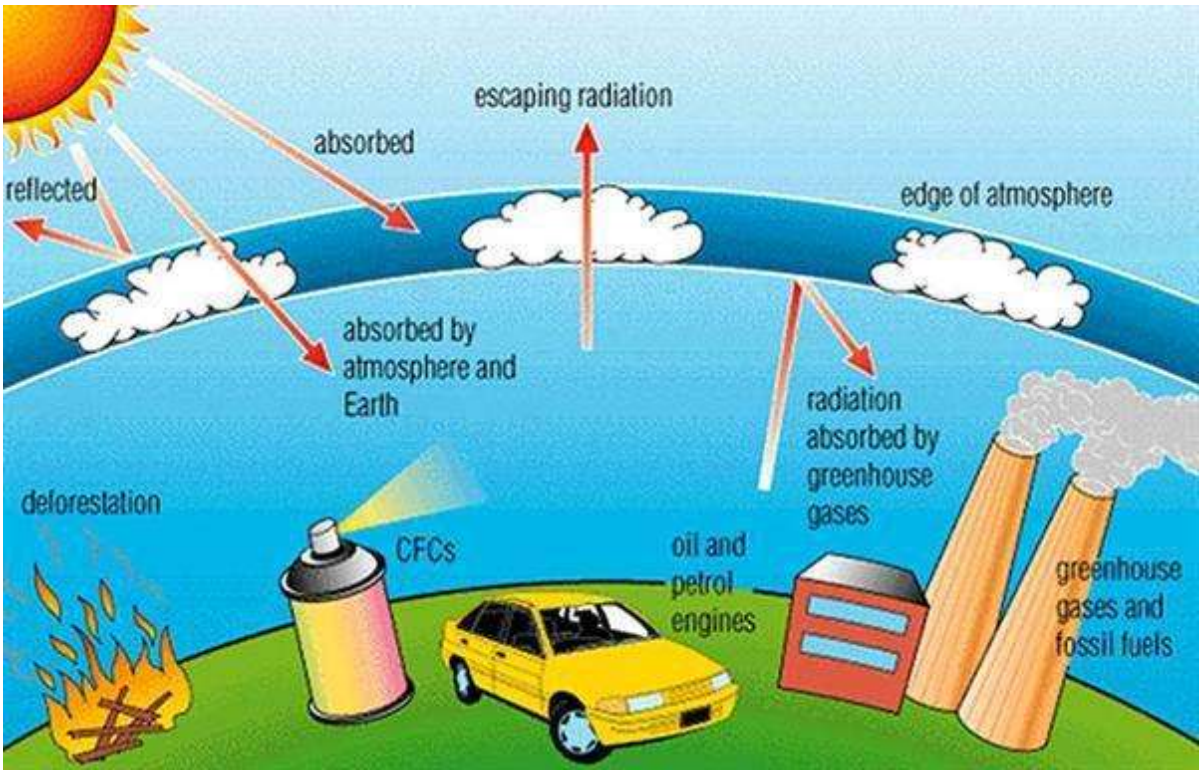
Among these CO_2 is the most important green house gas.O_3 and SO_2 act as serious pollutants causing global warming.Progrssive warming up of a gas surface due to blanketing effect of man made CO2 atmosphere.



GLOBAL WARMING:

Green house gases in the atmosphere are transparent to light but absorb IR radiation. These gases allow sunlight to penetrate the atmosphere and are absorbed by the earth surface. This sunlight is radiated back as IR which is absorbed by gases. As a result the earth surface and lower atmosphere becomes warm. This is called global warming.

105



EFFECTS OF GLOBAL WARMING:

1.Sea level increases as result of melting and thermal expansion of ocean.

2.High CO2 level in the atmosphere have a long term negative effect on crop production and forest growth.

3.Global rainfall pattern will change .Drought and floods will become more common. Raising temperature will increase domestic water demand.

4.Many plants and animal species will have a problem of adapting. Many will be at the risk of extinction, more towering verities will thrive.

5.As the earth becomes warmer the floods and drought becomes more frequent. There would be increase in water-borne diseases.

MEASURES TO CHECK GLOBAL WARMING:

1. CO2 emission can be cut by reducing the use of fossil fuel.
2. Plant more trees.
3. Shifting from coal to natural gas.
4. Stabilize population growth.
5. Remove efficiently CO2 from smoke stocks.
6. Removal atmospheric CO2 by utilizing photo synthetic algae.

ACID RAIN:

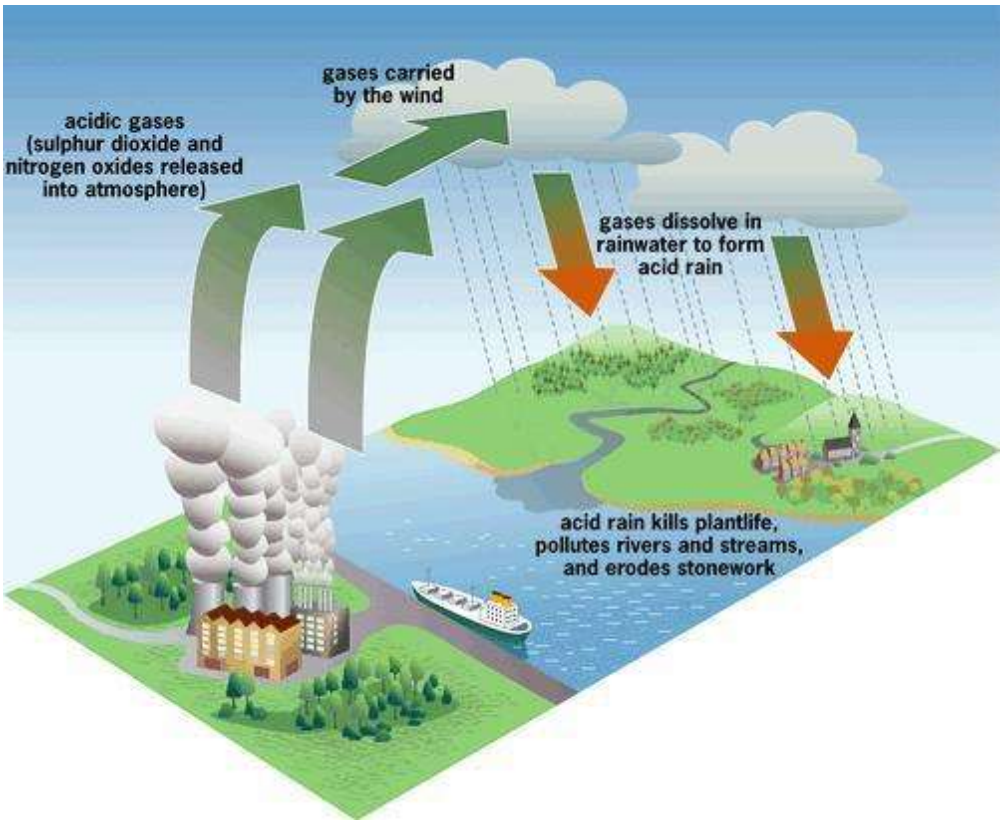
Normal rain water is always slightly acidic (pH 5-5.6) because of Co_2 present in the atmosphere gets dissolved in it. Because presence of SO_2 and NO_2 gases as pollutants in the atmosphere. The pH of the rain is further lowered. This type of precipitation of water is called acid rain.

Formation:

Acid rain means the presence of excessive acids in the rain water. The thermal power plants industries and vehicles release NO_2 and SO_2 in to the atmosphere due to the burning of coal and oil. These gases reacts with water vapor in the atmosphere and from acids like HNO_3,H2SO_4.These acids descends on to the earth as acid rain through rain water.

$SO_x + H_2O \square H_2SO_4$

$NO_y + H_2O \square HNO_3$



EFFECTS:

Effect on human being:

Human nervous system respiratory system and digestive system are affected by acid rain.It cause premature death from heart and lung disorder like asthma, bronchitis.

On building:

At present Taj mMahal in Agra is suffering due to SO2 and H2SO4 fumes from Madura refinery.Acid rain corrodes houses, monuments ,statues ,bridges and fences.

Acid rain causes corrosion of metals.

Terestrial and lake Ecosystem.

Reduce the rate of photosynthesis and growth in terrestrial vegetation.

Acid rain retards the growth of crops like beans potatoe ,carrot ,spinach. Acid rain rduces fish population ,black flies,mosquitoes ,deer flies occurs largely which causes number of complications in ponds rivers and lakes.

Activity of bacteria and other microscopic animals is reduced in acidic water. The dead materials are not rapidly decomposed.Hence the nutrients like N,P are locked up in dead matter.

Control of acid rain:

Emmision of No2 and SO2 from industries from power plants should be reduced by using pollution control equipments.

Liming of lakes nad soils should be done to correct the adverse effect of acid rain. In thermal points low sulphur content coal should be used.

OZONE LAYER DEPLETION

Ozone gas is present in the atmosphere. It is highly concentrated at the stratosphere Between10to 50 Km above the sea level and is called as ozone layer.

Importance: O_3 protects us from damaging UV radiation of the sun. It filters UV- B radiation. Now days certain parts of O_3 layer is becoming thinner and O_3 holes are formed. Because of this more UV–B radiation reaches the earth's surface. UV –B radiation affects DNA molecules, causes damages to the outer cell of plants and animals.

It causes skin cancer and eye disease in human beings.

Formation of O_3 : It is formed in the atmosphere by photochemical reaction

O_2 + hv ----------) O * + O *

The atomic oxygen reacts with molecular O_2 to
form O_3 O * + O_2 + M ----------) O_3 + M

Where M = third body like nitrogen.

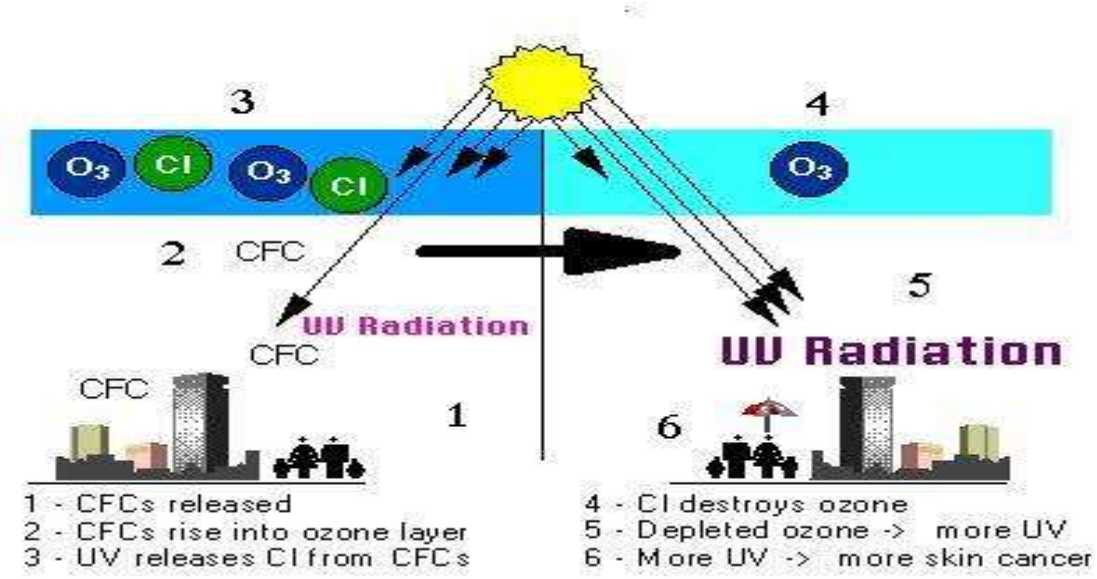
Causes of O_3 layer depletion : Refrigerators , air conditioners , aerosol sprays and cleaning solvents release CFC s into the atmosphere. CFCs releases chlorine which breakes O_3 to O_2

Cl + O_3 ----------) Cl O + O_2 (g) Cl O
+ O * ----------) Cl + O_2

Each chlorine atom is capable of breaking several O_3 molecules . It is a chain reaction. 1% loss of O_3 results in 2% increase in UV rays reaching the earth surface .

Ozone depletion chemicals CFC , HCFC , BFC. Some times atmospheric sulfur dioxide Is converted in to $H_2 S O_4$ which increases the rate of O_3 layer depletion.

109



Effects ozone layer depletion:

Effects on human beings

1.UV rays causes skin cancer.

2.Increases the rate of non melanin skin cancer in fair colored people.

3.Prolonged expose to UV rays leads to actinia Katatities (slow blindness) and cataracts.

Effects on aquatic system :

1.UV rays affects phytoplankton , fish , larval crabs.

2. phytoplankton consumes large amounts of CO_2 .

3.Decrease in phytoplankton results in more amount of CO_2 in atmosphere. This contributes to global warming.3. Ozone Depleting chemicals can causes global warming.

Control measures : Manufacturing and using of O_3 depleting chemicals should be stopped. Use of methyl bromide .which is a crop fumigant should be controlled. Replacing CFC s by other maerials which are less damage

NUCLEAR ACCIDENTS AND HOLOCAUST

Energy released—during a nuclear reaction is called nuclear energy. Nuclear fission and Nuclear fusion are used to prepare nuclear energy. During nuclear accidents large amount of energy and radioactive products are released into the atmosphere.

Types of nuclear accidents :-

Nuclear Test- Nuclear explosions –release radioactive particles and radioactive rays into the atmosphere.

Nuclear power plant accidents: Nuclear power plants located in seismic vulnerable area may cause nuclear accidents which releases radiation.

Improper disposal of radioactive wastes: Drums with radioactive wastes, stored underground rust and leak radioactive wastes into water, land and air.

Accidents during transport . Trucks carrying radioactive wastes (or) fuels in accidents. The major accident at a nuclear power plant is a core melts down.

Effects of nuclear radiation

1. Radiation affects DNA in cells.
2.Exposure to low dose of radiation (100to 250 rds) people suffer from fatigue, vomiting ,and loss of hair.
3. Exposer to high radation (400- 500 rds) affect bone marrow ,blood cells , natural resistance fail of blood clot.
4. Exposure to very high dose of radiation (10000rds) kills organisms by damaging the tissues of heart and brain.

Nuclear Holocaust : -Destruction of Biodiversity by nuclear equipments and nuclear bombs is called nuclear holocaust.

Effects of nuclear holocaust.

Nuclear winter, Nuclear bombardment will cause combustion of wood , plastics , forests etc.

Large quantity of soot will be carried out into the atmosphere.

Black soot absorbs all UV radiation and will not allow the radiation to reach the earth. There fore cooling will result. This reduces evaporation of water .In stratosphere there wont be significant moisture to rain out the black soot. Due to nuclear explosion a process opposite to global warming will occur. This is called Nuclear winter.

Nuclear holocaust in Japan

In 1945 two nuclear bombs were dropped in Hiroshima and Nagasaki in Japan. About 100000 people were

Killed and the cities were badly destroyed. This explosion emitted forceful neutrons and gamma radiation.

Radioactive Strontium liberated in the explosion replaced calcium in the bones .Large scale bone deformities occurred in the people of these cities.

WASTE LAND RECLAMATION

Waste land. The land which is not in use is called waste land . Waste land is unproductive, unfit for cultivation and grazing etc. 20% of the geographical area of India is waste land.

Types of waste land:
1. Uncultivable waste land.
2. Cultivable waste land.

Uncultivable waste land: Barren rocky areas, hilly slopes,
sandy deserts.

Cultivable waste land: These are cultivable but not cultivated for more than 5 years.Ex Degraded forest land.

Causes of waste land formation:

1. over exploitation of natural resources.
2. Industrial and sewage wastes.
3. Due to soil erosion, deforestation, water logging, salinity etc.
4. Mining activities destroy the forest and cultivable land.

Objects of waste land reclamation:

1. To prevent soil erosion, flooding and land slides.
2. To avoid over exploitation of natural resources.
3. To improve the physical structure and quality of the soil.
4. To conserve the biological resources and natural ecosystem.

Methods waste land reclamation:

Drainage: Excess water is removed by artificial drainage. This is for water logged soil reclamation.

Leaching: Leaching is a process of removal of salt from the salt affected soil by applying excess amount of water. Leaching is done by dividing the field into small plots. In continuous leaching 0.5to 1.0cm

Water is required to remove 90% of soluble salts.

Irrigation practices: High frequency irrigation with controlled amount of water helps to maintain better availability of water in the land. Application of green manure and bio fertilizers improves saline soil.

Application of gypsum: Soil sodality can be reduced with gypsum. Ca of gypsum replaces sodium from the exchangeable sites. This converts clay back into calcium clay.

Social Forestry programme: These programs involve strip plantation on road, canal sides and degraded forest land etc.

COSUMERISM AND WASTE PRODUCTS

The consumption of resources by the people is called consumerism. It is related to both increase In population size as well as increase in our demand due to change in life style. If needs increases The consumerism of resources also increases.

TRADITIONAL FAVOURABLE RIGHTS OF SELLERS

1. **T**he right to introduce any product.
2. The right to change any price.
3. The right to use incentives to promote their products

IMPORTANT INFORMATION TO BE KNOWN TO BUYERS

1. Ingredients of the products.
2. Manufacturing date and expiry date .Whether the product has been manufactured against an established law of nature or involved in right variation.

Objectives of consumerism.

1. It improves the right and powers of buyers.
2. It involves making manufacturer liable for the entire life cycle of a product
3. It force the manufacturer to reuse and recycle the product after usage.
4. Active consumerism improves human health and happiness and also it saves resources. Sources of wastes are agriculture, mining, industrial and municipal wastes.

Example for waste products. It includes paper, glass, plastic, garbage, food waste, Scrap, construction and factory wastes.

E- waste : Electronic equipments like computer, printers, mobile phones, calculator etc After usage thrown as waste.

Effects of waste: Waste from industries and explosives are dangerous to human life. Dumped wastes degrade soil and make it unfit for irrigation.

E-wastes contain more than 1000 chemicals which are toxic and cause environmental Pollution. In computers lead is present in monitors, cadmium in chips and cathode ray tube , pvc in cables. All these cause cancer and other respiratory problems if inhaled for long long periods.

Plastics are non-degradable and their combustion produces many toxic gases.

Factors affecting consumerism and generation of wastes:

People over population –Over population cause degradation of sources, poverty and premature deaths. This situation occurs in less developed countries (LDC's).In LDC's the percaptia consumption f resources and waste generation are less.

Consumption Over population: It occurs when there are less people than the available Resources . due to luxurious life style per captia consumption of resources is very high. Consumption is more and waste generation is more. Environment is also degraded.

ENVVIRONMENTAL LEGISLATION AND LAWS

Water (prevention and control of pollution) Act.1974.

This act provides for maintaining and restoring the sources of water. It also provide for preventing and controlling water pollution.

Features of water act.

1.This act aims to protect the water from all kind of pollution and to preserve the quality of water in all aquifers.

2.The act further provides for the establishment of central board and state boards For prevention of water pollution.

3. The states are empowered to restrain any person from discharging a pollutant (or) sewage or) effluent into any water body with out the consent of the board.

4.The act is not clear about the definition of pollutant, discharge of pollutant Toxic pollutant.

State pollution control board

The consent of this board is needed

1. To establish any industry or any treatment and disposal system or any extension or addition which likely discharge Or trade effluent into a stream or well or river or on land.
2. To use any new or altered outlet for the discharge of sewage.
3. To begin to make any new discharge of sewage.

Act also empowers the state board to order closure or stoppage of supply of Electricity, water or any other service to the polluting unit.

AIR PREVENTION ACT 1981

This act was enacted in the conference held at Stock Holm. It envisages the establishments Of central and State control boards to monitor air quality and pollution control.

Important features:

1.The central board may lay down the standards for quality of air.
2.The central board co-ordinates and settle the disputes between state boards.
3.The central board provides technical assistance and guidance to state boards.
4.The state boards are empowered to lay down the standards for emission of air pollutants from industries or other resources.
5.The state boards are to examine the manufacturing processes and control equipment for for the prescribed standards.
6.The direction of central board is mandatory on state boards.
7.With out the consent of the central board operation of an industrial unit is prohibited in heavily polluted area.
8.Violation of law is punishable with imprisonment for three months or fine of Rs 10000 or both.

This act applies to all pollution industries. This act empowers the state board to order closure of any industrial unit or stoppage of water supply or stoppage of electricity.

FOREST (COSERVATON) ACT 1980

This act is enacted in 1980. It aims to arrest deforestation. This act covers all types of Forests including reserved forests, protected forests and any forest land.

IMPORTANT Features of the act :

1.The reserved forests shall not be diverted or dereserved wit out the permission Of central govt.
2.The forest land may not be used nonforest purposes.
3.This act stops illegal activities with in forest area.

Features of amendment act of 1988

.1.Forest departments are departments are forbidden to assign any forest land by way of lease or to any private person or NG body for re- afforestation.
2.For re-afforstation clearance of any forest land is forbidden.
3.The division of forest land for non –forest uses is punishable.

WILD LIFE ACT 1972.

This act was amended in 1983, 1986, and 1991.This act is aimed to protect and preserve all animals and plants that are not Domesticated. India has 350 species of mammals, 1200 species of birds and about 20000 Known species of insects. Some of them are listed as endangered species in wild life protection act. Wild life is declining due to human action. Wild life products like skins, firs, feathers, Ivory etc. have decimated the population of many species. Wild life population monitored regularly and management strategies formulated to protect them.

Important Features

1The act covers the rights and non- rights of forest dwellers.
2It allows restricted grazing in sanctuaries but prohibits in national parks.

3.I t also prohibits the collection of non timber forest.
4.The rights of forest dwellers recognized by forest policy of 1988 are taken away by Amended wild life act of 1991.

ENVIRONMENT (PROTECTION) ACT 1986

This act empowers the central govt. to fix the standards for quality of air, water, soil, and noise. The central govt. formulates procedures and safe guards for handling of hazard substances.

Important features: 1. this act empowers the govt. to lay down procedures and safe guards for the prevention of accidents which cause pollution and remedial measures if accidents occur.

2 The govt.has the authority to close or prohibit or regulate any industry or its operation if

The violation of provisions of the act occurs.

3.Violation of the act is punishable with imprisonment for 5 years or fine of one lakh or both.

4.If violation continues an additional fine of Rs5000 per day may be imposed for entire period of Violation of rules.

5.The act empowers the officer of the central govt.to inspect the sight or the plant or machinery for preventing pollution and to collect samples of air , water, soil and other materials from any

Factory or its premises for testing.

PUBLIC AWARENESS

In order to conserve our environment each and every one must be aware about our environment problems and objectives of various environmental policies at natural and local level.

Objectives of public awareness:

1. To create awareness among rural and city people about ecological Imbalance, local environment and technological development.

2 To organize meetings, tree plantation programs, group discussion on development, exhibitions.

3.To focus on current environment problems and situations.

4.To train our planners, decision makers, politicians and administrators.

5.To eliminate poverty by providing employment that over comes the basic environmental issues.

METHODS TO CREATE ENVIRONMNTAL AWARENESS

1. Environmental education must be imparted to the students in schools and colleges.

2. Media like TV Radio and cable net work can educate the people on environmental issues through Cartoons, documentaries, street plays.

3. Cinema about environmental education should be prepared and screened in theatres compulsorily .This films may be released with tax free to attract the public.

4.All the news papers and magazines must publish the environment related problems.

5.Special audio visual and slide shows should be arranged in public places.

6.Voluntary organizations like NCC, NSS, and ROTRACT Club should be effectively utilized for creating environmental awareness.

7.Arranging competitions like story and essay writing painting competition on environmental issues for student as well as public.Attreactive prizes should be awarded for the best effort.

8.Public leaders cine actors and popular social reformers can make an appeal to the public about the urgency of environmental protection.