

SOCIAL ISSUES & THE ENVIRONMENT

FROM Unsustainable to Sustainable Development : —

- Two decades ago, the world looked at economic status alone for their development. The rich countries which had become industrialised, used their own natural resources rapidly.
- Also they used the natural resources of other developing countries. Due to this reason, the rich country became richer & the poor country got poorer.
- When the world realised that their lives are ~~are~~ affected by the environmental consequences all came to know that this type of development did not add quality to the life.
- By 1970s, specialists appreciated that economic growth alone could not bring a better way of life unless environmental conditions were improved.
- Industries which are based on only economic development began to suffer from serious environmental problems due to different types of pollutions.
- The idea of sustainable development grew from various environmental movements, but it was clearly defined in 1987 by the World Commission on Environment & Development also

known as Brundtland Commission 1987.

- Sustainable development is based on improving the quality of life for all ~~est~~ especially the poor people.
- It is a process which leads to a better life reducing the impact on environment. It's strength is that it acknowledges the interdependence of human needs and environmental requirements.
- For sustainable development, any activity should be considered with economic growth as well as its environmental impact.

* Urban problems Related to energy.

- In past, Urban region required relatively small amount of energy. But today, we need very much amount of energy because cities are the main center of economic growth, education, innovation, employment & trade.
- Until recently a big majority of human population lived in rural area because of economic activities like agriculture, fishing, hunting, cattle & some small industry.
- It was some 200 years ago with dawn of industrial area from the cities showed rapid development & Now, about 60% of world population lives in urban area & others are searching for employment for shifting in cities.
- The urban growth is very fast & it is becoming very difficult to accommodate all the industry, commercial & residential facilities within limited municipal boundaries.
- As the result cities is shifting into sub-urban or rural area. This phenomenon is known as "Urban Sprawl".
- In developing countries urban growth is very fast & in most of the cases it is unplanned & uncontrollable. Because urban people have higher standard of life.

→ In cities to achieve higher standard of life people demand more energy & use large amount of LPG, Oil, coal & electricity.

→ Urban population is very high so energy requirement is also large.

→ Over the last few years shortage of electricity falls short of demand, throughout the country.

Energy Management

→ we need to reduce energy consumption by building for lightening, heating & air conditioning.

→ We need to find more efficient way of producing electricity specially for renewable energy sources like wind, solar & wave power.

→ Need to convert waste into energy.

Need to plant tree.

Need to improve efficiency of vehicle or less use of motor bike etc.

* From Unsustainable to sustainable development

The process by which people meet their needs & improve their living condition is called as development.

Not only the present generation but the future generation also benefit from social, cultural & ecological sustainability.

This is possible by conservation of natural resources & diverse of life.

① Condition for achieving the goal for sustainable development:-

→ Ensure equal distribution of product & natural resources.

→ proper utilization of resource & management of waste product.

→ preservation of habitat, ecosystem & biosphere.

→ Ensure that human needs do not exceed the buffer potential of environment.

(a) Steps for providing sustainable development

→ Agriculture & rural development is only possible by human participation, proper use of land & conservation of water.

→ For development employment is also main factor which is possible by intelligence and knowledge. Plant reeducation is the big factor for human development. For that, forest development, utilization of tree & land, takes place.

→ Solid waste management, safe disposal & recycling of solid waste is important part in developing country.

→ Conservation of biodiversity.

→ Energy production & conservation.

→ Proper care of atmosphere, biosphere & hydrosphere.

→ Public awareness & training.

→ Protection of ecology & ocean resources.

* Water Conservation & Rain water Harvesting

Water is main part of daily life & it is basic need for all activities, right from domestic to agriculture & industry. With the increase in human population there has been severe water problem & water resources.

When Neil Armstrong saw the earth from moon it appeared 'Blue'. This is because of water which covers more than $\frac{2}{3}$ rd area of earth's surface.

But fresh water is less than 0.5%.
Rest of the water is either in the form of sea water or locked up ice caps in soil. As underground water.

Water conservation is a key link between balancing present water & future water need. We can make significant contribution to solving water crisis by identifying to areas like home, office, business, agriculture & industry where we waste water & then we make appropriate change in our water using habit.

Objectives of water conservation

The main objective is to make effort on utilization & proper use of water on sustainable basis with focus on:-

- 1) prepare time bound period of water conservation action plan.
- 2) Develop clear vision & strategy for water conservation & utilization of water in each level.
- 3) Improve irrigation & agriculture.
- 4) Minimize both ground & river water contamination. (pollution)
- 5) Recycling of ^{waste} water.

Water is the only natural resource to touch all aspect of human civilization. The world at present is searching for fresh water because today there is crisis on useable water due to its mismanagement. Recognizing the importance of water resources for future we is very important for future. The United Nations assembly proclaimed the year 2003 as "International

year of fresh water." The aim is to provide an opportunity to aware & motivate the people for managing water in sustainable way.
water harvesting:

✓ Rain water harvesting

- 1) Over the years in addition to traditional water harvesting structure like tank, village pond, river, etc are no. of schemes which have been introduced per availability of water resource.
- 2) One such scheme is community based rain water harvesting which is very important for creating filling space for water.
- 3) For future we need to conserve rain water by using different scheme in urban & rural region.

● Resettlement & Rehabilitation

- 1) Development means change which result improvement of lifestyle of people.
- 2) Land is the primary need for any development project such as industry, railway, power plant, infrastructure and hydroelectric project.
- 3) The first step in implementation of any project is to clear population from the project area.
- 4) Unfortunately in our country resettlement of affected people & species is not taken seriously.
- 5) As the result rehabilitation become unsatisfactory. The affected people live in fear of what the future will bring.

6) The stress & anger are level with in the community become very high.

7) Many project lead to displacement or forced for resettlement of population which require land & water.

8) According to world bank there are categories of project which affect the people & need environment assessment.

The projects are

Category A :- Dam & reservoir

- Industrial project
- Irrigation & Flood control project
- Mineral development project like oil & gas.
- Thermal & hydropower development
- River Basin (wide area) development.

Category B

- Electrical transmission line
- Rural electrification
- Agriculture
- Tourism
- Water shed project.

Category C

- Education
- Health
- Nutrition
- Institution development
- Human resource project

Watershed management

→ Watershed management is the technique which is used to describe the process of implementing land use practices & water management practices to protect & improve quality of water.

→ There are many natural resources in watershed management by which we use land & water resources properly.

→ watershed management include water supply, water quality improvement, drainage of waste water so that we gain continuous water supply for future use.

→ All the planning & utilization of water and management are,

a) To protect, conserve & improve land of watershed for efficient & sustainable production of water.

b) Using this technique we enhance water resources.

c) To improve & increase production of water resources secure wildlife.

d) Enhance ground water recharge.

e) It reduces occurrence of flood.

f) It provide standard quality of water & continuous supply of water.

g) Using watershed management we increase resources of pure water.

N.B:- In Ministry of Agriculture Govt of India has launched a national watershed Development plan in 1987-88 for preserving rain water.

Since then many watershed management technique have been taken of in many agro-ecological zone of country.

Imp:- what are the advantages of watershed management

Ans:- 1) It prevent shortage of water

2) Protect wildlife habitat

3) Improve agriculture

4) Minimize Flooding

5) Availability of underground water.

- 6) It provide job for local people.
- 7) Develop watershed for community use.
- 8) watershed management checks soil erosion.

Environmental Ethics.

Ethics means the goods of those value & virtues that should be encouraged. Ethics is something that tells us about how to do with environment. In day to day life we face difficult situation. Only we can decide what is wrong & what is right.

In many cases our conscience (heart) work on our past experience our knowledge & our beliefs which shows the right path for protection of environment.

Environment ethics is the discipline in philosophy that studies about moral relationship of human being & it also defines value of environment & non-human things.

Environment ethics is something about awareness about the fact of natural world where we live & it is not possible for human being to survive the life without environment. If we look at picture of state of our planet on arrival of new millennium then there are many areas in which we lose many natural things & the reasons are,

- 1) population growth & ~~decrease~~ ^{consumption} of natural resources per person.
- 2) Global atmospheric change.
- 3) Global warming & loss of biodiversity.
- 4) Lack of life support ecosystem.

with increase in the population it will automatically increased consumption of natural resources. In the world we see shortage of drinking water, depletion of underground water, over dose of fertilizer & agriculture soil losing property etc. Unfortunately very few of us are aware of this fact.

Increase in CO_2 level changes the temp. of earth. & it will also affect annual rain fall, the atmospheric CO_2 level is increasing 0.4% per year & it will be doubled in next century.

Following are the steps which must be taken by all the individuals.

- 1) Be aware of surrounding & take care of environment.
- 2) Choose simple life style & reduce consumption of resources.
- 3) Become emotionally involved with caring of earth.
- 4) Think Globally & act Locally.
- 5) Become part of act which is organized locally & at National level for conservation of environment.
- 6) Co-operate with each other for preserving natural resources.

✓ Global Warming

- In last two centuries the level of CO_2 has increased. This is due to excessive use of ~~burning~~ consumption of burning fuel & forest.
- Scientists have worried about increasing CO_2 level & other gases which warm & harm the atmosphere.
- As the result the atmospheric temp. will gradually rise causing

'GLOBAL WARMING'

- It is estimated that Global warming cause glacier to melt. This will increase expansion of water level & because of this it is impossible to survive in the earth.
- If the level of CO_2 & green house gases doubles then the sea level will increased by 0.6m. to 4ft.
- The coastal areas & some island will submerged & approx 1 billion people will be affected due to global warming.

✓ Acid Rain

Nitrogen dioxide (NO_2), sulphur dioxide (SO_2) & carbon dioxide (CO_2) releases from industry & automobile company are present in atmosphere which mixed with other gases which are already present in atmosphere.

These gases will react with water vapour & produce nitric acid, sulphuric acid & carbonic acid, which come down in the earth along with rain. & that rain is called as.

Acid Rain:

Sulphur dioxide + water vapour = Sulphuric acid.

Carbon dioxide + water vapour = Carbonic acid.

Nitrogen dioxide + water vapour = Nitric acid.

Normal water has pH value of 6-7 but acid rain water has pH value of 3-5.

Effect of atmosphere because of acid rain

- 1) The leaves of tree & plant become yellow & brown due to acid rain. Hence productivity of forest, Green land & agriculture is affected.
- 2) Properties of soil are changed & fertility is also affected.
- 3) Acid rain affect marble stone & metal due to this Taj Mahal is getting damaged. because of the gases released from Mathura Refinery Company.
- 4) Thousands of lakes in Northern Sweden & Norway has no longer support of fish due to acid rain in lake water.

Ozone Layer

→ In the stratosphere above 50Kms in the earth, there is a layer called as "Ozone Layer" / Ozone shield.

→ This ozone layer absorbs the UV rays of the sun & that rays do not reach in the earth.

→ The UV rays are injurious to health because it cause skin disease, Cataract in the eye lens & also affect immune system.

→ The UV rays also affected growth of plants & because of this agriculture get affected.

→ Without ozone shield our health & food source will be under threat.

→ In 1980, it was reported that there has been depletion of 40% - 50% of ozone layer above Antarctica.

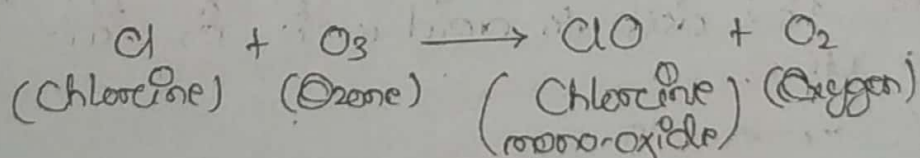
→ This depletion in ozone layer results ozone hole.

→ The main reason of this depletion is due to chemical called CFC (Chloro-Fluoro Carbon).

→ The CFC is mainly used in freezing agent in refrigerator & A/C.

→ The Chlorine atoms formed by breakdown of CFC react with ozone & produce chlorine mono-oxide gas which destroy ozone layer.

→ One atom of Chlorine can destroy one molecule of ozone.



Assignment

- 1) Explain biographical classification of India.
- 2) write short notes on Acid rain, Global warming, climate change, Holocaust.
- 3) what are different water act given by govt. to public.

Holocaust

The holocaust is a Greek word which means "whole burnt". In 1933, the Jewish population of Europe stood on one stand having population of 9 million. Jews who had established in Europe & feels that the Nazi men are victim & they decide to murder all of them.

From 1941-1945 Jewish were systematically murdered, which was the end of Nazi regime. By killing all of them the ethics, mythology & the political man of Nazi regime ~~there~~ they are killed & destroyed from Europe.
permanently

Nuclear Accidents

A Nuclear accident is defined by IAEA (International Atomic Energy Agency). As an event that has significant consequences to the people large no. of radio active released on environment. The example of Nuclear Accident is,

1st happened on Kalpakkam, India in 1987. It is also a key factor to public concerned about nuclear facilities. There are many risk in nuclear accident because it destroy environment.

In 2014, there have been more than 100 serious nuclear accident & incident has been adopted which destroy environment as well as large no. of population also.

Nuclear accident can involve loss of life and very large no. of cost for remediation work.

Nuclear power accidents in India

- 1) 4 May 1989 - Kalpakkam, India
- 2) 10 Sep. 1989
 &
 13 May 1992 } Tarapur, Maharashtra
- 3) 13 May 1992 - Tarapur, Maharashtra
- 4) 31 March 1993 - Bulardstahr, UP
- 5) 2 Feb. 1995 - Kota, Rajasthan.
- 6) 22 Oct 2002 - Kalpakkam, India.

Climate Change

It is defined as weather condition of an area in particular period of time. weather is atmospheric condition of a region in specific time & this condition may be changed from year-to-year, season-to-season, day-to-day & hour-to-hour.

So climate is nothing but the atmospheric condition which may be changed with the change in time.

The conditions & factors which effect the climate:

- 1) The Sun, which is the source of light & whose radiant energy determine state of atmosphere or condition of environment.

2) The revolution of earth around the sun & because of this, in India december is winter & may is summer.

3) The vertical & horizontal movement of air also affect climate condition.

NB:- 1) The vertical air is caused due to heating of air at ground level, so vertical air is the heated wave which is produced from sky.

ii) The horizontal movement of air is wind. This is caused by different type of air pressure at different place.

4) Like river water ocean water also flows from one region to another region & this flow of water is called Ocean current. This ocean current directly affect the temp.

5) Altitude is the most important factor (Height) for deciding climate. The higher you go, cooler environment you feel. The temp. at sea level is always higher than the temp. of top of the mountain.

6) We know that the temp difference between land & sea is

Environmental Acts

① Air (Prevention & Control of Pollution) Act, 1981.

- The object of the Act is to provide means for the prevention, control & abatement of air pollution in order to preserve the quality of air.
- The Act defines relevant terms such as air pollution, air pollutants, vehicular exhausts & industrial plants etc.
- Air pollution is defined as the presence of any liquid or gaseous substances in the atmosphere in such a concentration which tends to be injurious to man, animals, plants or environment.
- The Act also includes automobile, diesel vehicles, transport, railways & domestic fuels.
- The Act provides, as per section 19, the declaration of certain heavily polluted areas as Air pollution control area & no industrial plant shall be operated in these areas without prior consent of the state pollution Control board.
- The central & State water Boards have been entrusted with the task of controlling and preventing air pollution & accordingly they have been redesigned as Central pollution Control Board & state Pollution Control board respectively.
- The State Boards have to lay down & enforce standards for prevention & control of air pollution.

→ Under section 20 of the Act, the state govt. in consultation with the respective Board may give instructions to the concerned Authority in-charge for Regulations under the motor vehicles Act, 1939, to ensure emission standards for automobiles. Failure to comply with the conditions prescribed for this purpose is punishable with fine & imprisonment.

→ The state Boards have powers to sue a polluter in a court of law to punish him for polluting the air & the expenses incurred by the board will be recovered from the polluter.

→ The Boards have powers to authorise any person to inspect the premises of the polluter & to collect samples of emissions from chimneys, fuels, ducts or any other outlets for the analysis of pollutants.

→ The Act also include noise under the category of air pollutants in 1987.

② Water Act.

The water act is enacted with the objective of prevention & control of pollution. The act aims at the maintaining or restoring the wholesome nature of water for the establishment of Boards & to vest them with such powers so as to enable them to carry out the purpose of the act. The water act is followed by the water (prevention & control of pollution) Rules, 1975 & the water (prevention & control of pollution, procedure for transaction of Business) Rules 1975. The provisions of the Act shall have effect not with standing anything contained to the contrary in any other enactment. There are two different water act. They are,

- 1) Water (prevention & control of pollution) Act, 1974.
- 2) Water (prevention & control of pollution) Cen Act, 1977.

① Water (Prevention & Control of Pollution) Act, 1974.

The Act defined terms like pollution, sewage effluent, trade effluent, stream & boards.

→ The salient features & provisions of the act are summed up as follows:

- 1) The Act provides for maintenance & restoration of quality of all types of surface & ground water.
- 2) It provides for the establishment of Central & State Boards for pollution control.
- 3) The Act assigns power & functions to these boards to control pollution.
- 4) The Central & State pollution Control Boards are given comprehensive powers to advise, coordinate & provide technical assistance for prevention & control of water pollution.
- 5) The Act has provisions for funds, budget, accounts & audit of the Central & State pollution control Boards.
- 6) The Act prohibits disposal of any poisonous, noxious or polluting matter to the flow of water in a stream. However, dumping of any material into a stream for the purpose of reclamation of land is not considered as offence.

- 7) The Act provides for severe & deterrent punishments for violation of the Act which includes fine & imprisonment.

The main regulatory bodies are the pollution control Boards, which have been conferred the following functions & powers.

Functions of Central Pollution Control Board

- 1) Cpcb advises the central govt. in matters related to prevention & control of water pollution.
- 2) Coordinates activities of state pollution control Boards & provides them technical assistance & guidance.

- 3) Organizers Comprehensive programmes on pollution related issues through mass media.
- 4) Lays down standards for water quality parameters.
- 5) Collects, compiles & publishes technical & statistical data related to pollution.
- 6) prepare manuals for treatment & disposal of sewage & trade effluents.
- 7) Establishes laboratories for analysis of water, sewage & trade effluent samples.

Functions of State Pollution Control Board

- 1) The SPCB has similar functions to be executed at state level & are governed by the direction of CPCB.
 - 2) SPCB advises the govt. with respect to the location of any industry that might pollute a stream or river.
 - 3) It lays down standards for effluent entering the water bodies.
 - 4) The state board has powers to obtain information, to take samples of effluents from any industry, to sanction or refuse consent of the industry, to make survey of any area & gauge & keep record of the volume & other characteristics of any stream or well.
- ② The water (Prevention & control of pollution) Cen Act.

- 1) The Act empowers the Central water Board to collect cen on water consumed by persons carrying on certain scheduled industries & by local Authorities responsible for supplying water.
- 2) The cen & the consent fees from the major sources of revenue to run the central & state water Boards.
- 3) The Act has been amended in 1991 with a view to augment the resources of the Boards by removing the lacunae in the Act & to provide rebate to the industries for complying with the consumption & effluent quality standards.