Unit-4

Social Issues and the Environment

Topics to be covered: Climate change, global warming, acid rain, ozone layer depletion, Levels of biological Diversity; Threats and Conservation of Biodiversity; Solid waste Management: Causes, effects, and control measures of urban and industrial wastes.

Environmental Protection Act 1986, Population growth explosion- family welfare program, Environment and human health, Environmental & Women Education.

Climate change:

The average temperature in many regions has been increasing in recent decades. The global average surface temperature has increased by 0.6° + 0.2° C over the last century. Globally, 1998 was the warmest year and the 1990s the warmest decade on record. Many countries have experienced increases in rainfall, particularly in the countries situated in the mid to high latitudes. In some regions, such as parts of Asia and Africa, the frequency and intensity of droughts have been observed to increase in recent decades. Episodes of El Niño, which creates great storms, have been more frequent, persistent and intense since mid-1970s compared with the previous 100 years. All these are signs that the earth is sick. Its climate is changing, making it more difficult for mankind to survive. The earth is losing its ability to balance itself due to the imbalances created by human activities.

Human societies will be seriously affected by extremes of climate such as droughts and floods. A changing climate would bring about changes in the frequency and/or intensity of these extremes. This is a major concern for human health. To a large extent, public health depends on safe drinking water, sufficient food, secure shelter, and good social conditions. All these factors are affected by climate change. Fresh water supplies may be seriously affected, reducing the availability of clean water for drinking and washing during drought as well as floods.

Water can be contaminated and sewage systems may be damaged. The risk of spread of infectious diseases such as diarrhoeal diseases will increase. Food production will be seriously reduced in vulnerable regions directly and also indirectly through an increase in pests and plant or animal diseases. The local reduction in food production would lead to starvation and malnutrition with long-term health consequences, especially for children. Food and water shortages may lead to conflicts in vulnerable regions, with serious implications for public health. Climate change related impacts on human health could lead to displacement of a large number of people, creating environmental refugees and lead to further health issues.

Changes in climate may affect the distribution of vector species (e.g. mosquitoes) which in turn will increase the spread of disease, such as malaria and filariasis, to new areas which lack a strong public health infrastructure. The seasonal transmission and distribution of many diseases

that are transmitted by mosquitoes (dengue, yellow fever) and by ticks (Lyme disease, tickborne encephalitis) may spread due to climate change.

Strategies aimed at reducing potential health impacts of anticipated climate changes should include monitoring of infectious diseases and disease vectors to detect early changes in the incidence of diseases and the geographical distribution of vectors; environmental management measures to reduce risk; disaster preparedness for floods or droughts; and their health related consequences.

It will be necessary to create early warning systems and education for epidemic preparedness. Improved water and air pollution control will become increasingly essential for human health. Public education will have to be directed at changes in personal behaviour. Training of researchers and health professionals must become an essential part of the world becoming more responsible towards the expected outcome of Global Climate Change (GCC).

Global Warming:

About 75% of the solar energy reaching the Earth is absorbed on the earth's surface which increases its temperature. The rest of the heat radiates back to the atmosphere. Some of the heat is trapped by greenhouse gases, mostly carbon dioxide. As carbon dioxide is released by various human activities, it is rapidly increasing. This is causing global warming.

The average surface temperature is about 15°C. This is about 33°C higher than it would be in the absence of the greenhouse effect. Without such gases most of the Earth's surface would be frozen with a mean air temperature of -18°C. Human activities during the last few decades of industrialisation and population growth have polluted the atmosphere to the extent that it has begun to seriously affect the climate. Carbon dioxide in the atmosphere has increased by 31% since pre-industrial times, causing more heat to be trapped in the lower atmosphere. There is evidence to show that carbon dioxide levels are still increasing. Many countries have signed a convention to reduce greenhouse gases under the United Nations Convention on Climate Change. Current international agreements are however not still effective to prevent the significant changes in climate and a rise in sea levels.

Global warming is accelerating faster than what climatologists had calculated a few years ago. In 1995, the Intergovernmental Panel on Climate Change predict that global warming would rise temperatures by 3.5 to 10 degrees Centigrade during the 21^{st} century, if the present trends continue. It is now believed that this could be much greater. This would lead to not only temperature changes but in the amount of rainfall. India may see great annual fluctuations in rainfall leading to floods and drought.

Acid rain:

When fossil fuels such as coal, oil and natural gas are burned, chemicals like sulfur dioxide and nitrogen oxides are produced. These chemicals react with water and other chemicals in the air to form sulfuric acid, nitric acid and other harmful pollutants like sulfates and nitrates. These acid pollutants spread upwards into the atmosphere, and are carried by air currents, to finally return to the ground in the form of acid rain, fog or snow. The corrosive nature of acid rain causes many forms of environmental damage. Acid pollutants also occur as dry particles and gases, which when washed from the ground by rain, add to the acids in the rain to form a more corrosive solution. This is called acid deposition.

Damage from acid rain is widespread in North America, Europe, Japan, China and Southeast Asia. In the US coal burning power plants contribute to about 70% of sulfur dioxide. In Canada oil refining, metal smelting and other industrial activities account for 61% of sulfur dioxide pollution. Motor vehicle exhaust fumes are the main source of nitrogen oxides. The acids in acid rain chemically react with any object they come in contact with. Acids react with other chemicals by giving up hydrogen atoms.

Effects: Acid rain is known to cause widespread environmental damage.

1. Acid rain dissolves and washes away nutrients in the soil which are needed by plants. It can also dissolve naturally occurring toxic substances like aluminum and mercury, freeing them to pollute water or poison plants.

2. Acid rain indirectly affects plants by removing nutrients from the soil in which they grow. It affects trees more directly by creating holes in the waxy coating of leaves, causing brown dead spots which affect the plant’s photosynthesis. Such trees are also more vulnerable to insect infestations, drought and cold. Spruce and fir forests at higher elevations seem to be most at risk. Farm crops are less affected by acid rain than forests.

3. Acid rain that falls or flows as ground water to reach rivers, lakes and wetlands, causes the water in them to become acidic. This affects plant and animal life in aquatic ecosystems.

4. Acid rain also has far reaching effects on wildlife. By adversely affecting one species, the entire food chain is disrupted, ultimately endangering the entire ecosystem. Different aquatic species can tolerate different levels of acidity. For instance clams and mayflies have a high mortality when water has a pH of 6.0, while frogs can tolerate more acidic water, although with the decline in supply of mayflies, frog populations may also decline. Land animals that are dependent on aquatic organisms are also affected.

5. Acid rain and dry acid deposition damages buildings, automobiles, and other structures made of stone or metal. The acid corrodes the materials causing extensive damage and ruins historic buildings. For instance the Parthenon in Greece and the Taj Mahal in India have been affected by acid rain.

6. Although surface water polluted by acid rain does not directly harm people, the toxic substances leached from soil can pollute water supply. Fish caught in these waters may be harmful for human consumption. Acid, along with other chemicals in the air, produces urban smog, which causes respiratory problems.

Control measure:

The best way to stop the formation of acid rain is to reduce the emissions of sulfur dioxide and nitrogen oxides into the atmosphere. This can be achieved by using less energy from fossil fuels in power plants, vehicles and industry. Switching to cleaner burning fuels is also a way out. For instance using natural gas which is cleaner than coal, using coal with lower sulfur content, and developing more efficient vehicles. If the pollutants have already been formed by burning fossil fuels, they can be prevented from entering the atmosphere by using scrubbers in smokestacks in industry. These spray a mixture of water and limestone into the polluting gases, recapturing the sulfur.

In catalytic converters, the gases are passed over metal coated beads that convert harmful chemicals into less harmful ones. These are used in cars to reduce the effects of exhaust fumes on the atmosphere. Once acid rain has affected soil, powdered limestone can be added to the soil by a process known as liming to neutralize the acidity of the soil.

Ozone layer depletion:

Ozone is formed by the action of sunlight on oxygen. It forms a layer 20 to 50kms above the surface of the earth. Ozone in the upper atmosphere however, is vital to all life as it protects the earth from the sun's harmful ultraviolet radiation. The ozone layer in the upper atmosphere absorbs the sun's ultraviolet radiation, preventing it from reaching the earth's surface.

This layer in the atmosphere protects life on earth from the dangerous UV radiation from the sun. In the 1970s, scientists discovered that chemicals called chlorofluorocarbons or CFCs, which were used as refrigerants and aerosol spray propellants, posed a threat to the ozone layer. The CFC molecules are virtually indestructible until they reach the stratosphere, where UV radiation breaks them down to release chlorine atoms. The chlorine atoms react with ozone molecules which break down into oxygen molecules, which do not absorb UV radiations. Since the early 1980s, scientists detected a thinning of the ozone layer in the atmosphere above Antarctica. This phenomenon is now being detected in other places as well including Australia. Although the use of CFCs has been reduced and now banned in most countries, other chemicals and industrial compounds such as bromine, halocarbons and nitrous oxides from fertilizers may also attack the ozone layer.

The destruction of the ozone layer is seen to cause increased cases of skin cancer and cataracts. It also causes damage to certain crops and to plankton, thus affecting natures food chains and food

webs. This in turn causes an increase in carbon dioxide due to the decrease in vegetation.

Levels of biological Diversity:

Biodiversity means the variety in the species of plants, animals, fungi and all the organisms present on the earth. It also covers the genetic information of the organisms. Biodiversity plays a significant role in the working of the different ecosystems. Some of its advantages include the following:

- Humans derive several economic benefits from biodiversity like food, firewood, construction material and products of medicinal importance.
- Biodiversity plays a vital role in nature's priceless services, e.g. oxygen provided by the Amazon forests.

Biodiversity is divided into three levels which are mentioned below.

1. Genetic Diversity: Many species on earth are connected via genetic connections. The members of a species share genes. Genetic diversity is crucial for any population to adapt itself to the changing environment, and it is responsible for the biodiversity in the ecosystem. Species with more diversity are less likely to become extinct. On the other hand, species with less diversity have lesser chances of survival because of unfavorable features like an inherited disease that can spread within the population.
2. Species Diversity: The diversity at the level of species is referred to as species diversity. Species are the primary measure of biological diversity. The number of species present in a given region or ecosystem is known as species richness. Every region on the earth does not have the same number of species. For example, Western Ghats have more species than Eastern Ghats.
3. Ecological Diversity: Ecological diversity means the different types of ecosystems present in a geographical area. An ecosystem consists of various species which live and interact together via the flow of energy, nutrients etc. For example, India, with its mountains, deserts, rain forests, wetlands, mangroves, coral reefs, has a great ecosystem diversity compared to any other country in the world.

Number of Species on Earth and in India: Several records tell about the species discovered until now, but many species are yet to be discovered. According to IUCN(2004), more than 1.5 million total animal and plant species have been described so far. In terms of land area, India has 2.4 per cent of the world's land area, but its share in the global biodiversity is around 8.1 per cent, and nearly 45000 species of plants and twice as many animals have been recorded from here making India one of the biodiversity hotspots of the world.

Pattern of Biodiversity: The variety of plants and animals is not consistent in every part of the earth, and it shows an uneven distribution. The biodiversity decreases from the equator toward the poles. For example, Columbia, which is located near the equator, has 1400 species of birds, and on the other hand, New York has just 105 species. The Amazon rainforest in South America is the largest biodiversity hotspot on earth.

Importance of Biodiversity:

- Biodiversity plays an important role in the functioning of the ecosystem, and it provides numerous benefits to humans like food, construction material, medicinal plants and oxygen.
- Biodiversity also helps in regulating the climate, water quality, and diseases. Moreover, it has recreational and cultural benefits too.

Loss of biodiversity: The biodiversity of our planet is declining at a rapid pace. According to IUCN Red List (2004), 784 species have become extinct in the last 500 years, and some examples are the dodo (Mauritius), quagga (Africa), steller's sea cow (Russia). Reasons for this biodiversity loss are:

- Habitat Loss: This is the main cause of the loss of biodiversity. Forests are the homes for the species, but now they are being destroyed rapidly for commercial purposes. Pollution also threatens the survival of many species.
- Over-Exploitation: Over-exploitation of natural resources by human beings has led to the loss of biodiversity, e.g. various species of fishes are over-harvested, and now their existence is endangered.
- Invasion of Alien Species: Sometimes, alien species are introduced with the native species, and some of them become invasive that pose a threat to the indigenous species.

Conservation of Biodiversity: There are two types of methods by which biodiversity can be protected:

- In-situ Conservation: When species are protected in their ecosystem or habitat or when the whole ecosystem is protected, then it is called In situ conservation. National parks, biosphere reserves and sanctuaries are examples of this type of conservation. In India, 14 biosphere reserves and 90 national parks are there.
- Ex-situ Conservation: In this type of conservation method, threatened species are taken out from their natural habitat and are placed in a special place where they can be taken care of and protected. To this end, several botanical gardens, zoological parks, and safari parks have been set up.

Solid waste Management:

The term "solid waste management" refers to the collection, treatment, and disposal procedure for solid wastes. Wastes are gathered from various sources and are disposed of through the waste management process, which involves the collection, transportation, treatment, analysis, and disposal.

It is a serious worldwide problem as it causes both water and air pollution. It shows its direct effect on health, economic growth, and degradation of the environment. It can lead to pollution of the environment and outbreaks of vector-borne diseases (diseases spread by rodents and insects).

Causes: The various factors responsible for increase in the amount of waste are as below

- Population growth
- Rate of consumption of resources
- Decrease in the life span of product /resource
- Urbanization and industrialization
- Change in the life style of community

Solid wastes are generated from various sources eg.

- **Residential areas -** Single-family and multifamily dwellings. This category of wastes includes all organic and inorganic refuse from residential areas. The organic component include food waste, textile, plastic, rubber etc. The inorganic portion includes, metals, glass etc.
- **Commercial areas -** Commercial areas include stores, restaurants, markets, office buildings, hotels, motels, auto shops, etc. This category mostly include paper, plastics, glass, metal, food waste, batteries, oil and paints etc.
- **Institutional –** Institutional sources includes Schools, hospitals, prisons, government organizations etc. The type of waste generated from these areas are paper, plastics, food waste, chemicals and hazardous waste from laboratoiries etc.
- **Construction and demolition-** The sources include new construction sites, road repair, renovation sites etc. The types of wastes are concrete, cement, dirt, wood, plumbing material electrical fittings etc.
- **Municipal services -** These wastes are generated by operation and maintenance of the municipal facilities. The types are street cleaning, landscaping, catch-basin cleaning, parks, recreation etc.
- **Treatment plant sites -** The sources are Water, wastewater, industrial treatment processes. Types of waste being produced from these areas are sludge, chemicals, outdated parts etc.

- **Industrial -** The sources are small, medium and large industries including construction, fabrication, light, and heavy manufacturing, refineries, chemical plants etc. waste produced are both hazardous and non-hazardous substances.
- **Agricultural-** The sources are field and raw crops, orchards, farm etc. The waste being generated from these sources are harvest residues, waste grains and stalks etc.
- **Biomedical waste-** The sources are hospitals, blood banks, pathology and veterinary hospitals etc. The biomedical waste include human anatomical waste, waste sharps like needles, scalpels, cytotoxic drugs, discarded medicines, bandages, swab and biotechnology waste etc.

Effects:

1. Health consequences of poor industrial waste disposal :
    - **Skin contact :**Chemieals that cause dermatitis usually do so through direct contact with skin. Some chemicals like corrosive acids can damage the skin by a single contact while others, like organic solvent may cause damage by repeated exposure.
    - **Inhalation :** lnhalation is the most common source of workplace exposure to chemicals and the most difficult to control. Air pollutant can directly damage respiratory tract or gets absorbed through lung and cause system/systemic effects. An adult male breathes about 10 cubic meters of air during a normal working day.
    - **Ingestion :** Ground water and sub soil water contamination from leachates from refuse dumps and poorly managed landfill sites can result in ingestion of toxic chemicals by population groups who live far away from the factory sites and decades after the garbage has been dumped.
2. Environment Impact:
    - If the solid wastes are not treated properly, decomposition and putrefaction (decay) may take place.
    - The organic solid waste during decomposition may generate obnoxious (intolerable) odors.

Control measures of urban and industrial wastes:

An integrated waste management strategy includes three main components:

1. Source reduction

2. Recycling

3. Disposal

Reduction in use of raw materials: Reduction in the use of raw materials will correspondingly decrease the production of waste. Reduced demand for any metallic product will decrease the mining of their metal and cause less production of waste.

Reuse of waste materials: The refillable containers which are discarded after use can be reused. Villagers make casseroles and silos from waste paper and other waste materials. Making rubber rings from the discarded cycle tubes which are used by the newspaper vendors, instead of rubber bands, reduces the waste generation during manufacturing of rubber bands. Because of financial constraints poor people reuse their materials to the maximum.

Recycling of materials: Recycling is the reprocessing of discarded materials into new useful products. For e.g. formation of some old type products e.g. old aluminium cans and glass bottles are melted and recast into new cans and bottles. Formation of new products: Preparation of cellulose insulation from paper, preparation of fuel pellets from kitchen waste. Preparation of automobiles and construction materials from steel cans. The process of reducing, reusing and recycling saves money, energy, raw materials, land space and also reduces pollution. Recycling of paper will reduce cutting of trees for making fresh paper. Reuse of metals will reduce mining and melting of ores for recovery of metals from ores and prevent pollution.

Waste segregation and disposal

Sanitary landfill: In a sanitary landfill, garbage is spread out in thin layers, compacted and covered with clay or plastic foam. In the modern landfills the bottom is covered with an impermeable liner, usually several layers of clay, thick plastic and sand. The liner protects the ground water from being contaminated due to percolation of leachate. Leachate from bottom is pumped and sent for treatment. When landfill is full it is covered with clay, sand, gravel and top soil to prevent seepage of water. Several wells are drilled near the landfill site to monitor if any leakage is contaminating ground water. Methane produced by anaerobic decomposition is collected and burnt to produce electricity or heat.

Composting: Due to shortage of space for landfill in bigger cities, the biodegradable yard waste (kept separate from the municipal waste) is allowed to degrade or decompose in an oxygen rich medium. A good quality nutrient rich and environmental friendly manure is formed which improves the soil conditions and fertility.

Incineration: Incinerators are burning plants capable of burning a large amount of materials at high temperature generally more than 900°C. The required heat comes from oxidation of organically bound carbon and hydrogen present in the waste material or the added fuel. During incineration high levels of dioxins, furans, lead and cadmium may be emitted with the fly ash of incinerator. Dioxin level may reach many times more than in the ambient environment. For incineration of materials, it is better to remove batteries containing heavy metals and plastic containing chlorine before burning the material. Prior removal of plastics will reduce emissions of dioxins and polychlorinated biphenyls (PCBs).

Pyrolysis - It is a process of breaking down combustible material at high temperature in the absence of oxygen.

Composting - Composting (from the Latin compositum, meaning mixture) refers to a biodegradation (aerobic/ anaerobic) process of a mixture of substrates carried out by a microbial community composed of various populations in aerobic conditions and in the solid state. It is an exothermic process, produces energy in the form of heat, passes through a thermophilic phase preceded and followed by two mesophilic phases with temporary release of phytotoxins (intermediary metabolites, ammonia, etc.). At the end of the process, this phytotoxicity is completely overcome and the final product is beneficial to plant growth. The final production is carbon dioxide, water, minerals, and stabilized organic matter (compost).

Autoclaving - Autoclaving is a process of killing the microorganisms (sterilization) of solid waste specially biomedical waste (waste generated from hospitals) at high pressure and temperature in equipment known as autoclave.

Disposal of industrial solid waste:

Industrial waste whilst presenting the same disposal problems as domestic waste, also contains hazardous waste, thereby exacerbating the difficulties of disposal. Fortunately, the types of industrial wastes generated in a municipal area of a developing country are such that there are not usually large quantities of particularly hazardous wastes for disposal. In the past there has been little control over the disposal of industrial wastes; indeed, it has only been during the last decade that even developed countries have brought in legislation to curb the uncontrolled and environmentally unacceptable practices that were widespread. Without such legislation, disposal is almost always by uncontrolled landfill at sites which often pose a threat of water pollution due to leachates.

Environmental Protection Act 1986:

The Act came into force on November 19, 1986, the birth anniversary of our Late Prime Minister

Indira Gandhi, who was a pioneer of environmental protection issues in our country. The Act extends to whole of India. The Constitution of India clearly states that it is the duty of the state to ‘protect and improve the environment and to safeguard the forests and wildlife of the country’.

As compared to all other previous laws on environment protection, the Environment (Protection) Act, 1986 is a more effective and comprehensive measure to fight the problem of pollution.

Objects:

i. The Environment Protection Act is a means to implement the decisions of the UN Conference

on the Human Environment held in Stockholm (June 1972).

ii. The Environment Protection Act also seeks to enact a general blanket law on environmental

protection, dealing with all aspects of pollution and harm to the nature and not limiting its scope to just one type of pollution or pollutants.

iii. The exhaustive nature of Environment Protection Act also ensures that no ambit of environmental protection is left and all hazards' to the environment are absolutely roofed and addressed under the Act.

iv. The Act also provides punishment (deterrent in nature) to those responsible for causing harm to the environment or endangering it.

v. The Act provides for a scheme and a mechanism of working of various already existing regulatory authorities and also creates more agencies for furtherance of environment protection.

vi. The Act also aims at promoting sustainable development as a means to achieve the end of

prosperity and opulence.

POPULATION EXPLOSION – FAMILY WELFARE PROGRAM

The world population is growing by more than 90 million per year, of which 93% is in developing countries. This will essentially prevent their further economic 'development'. In the past, population growth was a gradual phenomenon and the Earth's ability to replenish resources was capable of adjusting to this increase. In the recent past, the escalation in growth of human numbers has become a major cause of our environmental problems.

The increasing pressures on resources place great demands on the in-built buffering action of nature that has a certain ability to maintain a balance in our environment. However, current development strategies that essentially lead to short-term gains have led to a breakdown of our Earth's ability to replenish the resources on which we depend.

In response to our phenomenal population growth, India seriously took up an effective Family Planning Program which was renamed the Family Welfare Program. Slogans such as 'Hum do hamare do' indicated that each family should not have more than two children. It however has taken several decades to become effective.

At the global level by the year 2000, 600 million, or 57% of women in the reproductive age group, were using some method of contraception. However the use of contraceptive measures is higher in developed countries – 68%, and lowers in developing countries - 55%. Female sterilization is the most popular method of contraception used in developing countries at present.

This is followed by the use of oral contraceptive pills and, intrauterine devices for women, and the use of condoms for men. India and China have been using permanent sterilization more effectively than many other countries in the developing world.

Informing the public about the various contraceptive measures that are available is of primary importance. This must be done actively by Government Agencies such as Health and Family Welfare, as well as Education and Extension workers. It is of great importance for policy makers and elected representatives of the people – Ministers, MPs, MLAs at Central and State levels – to understand the great and urgent need to support Family Welfare.

The media must keep people informed about the need to limit family size and the ill effects of a growing population on the world's resources. The decision to limit family size depends on a couple's background and education. This is related to Government Policy, the effectiveness of Family Welfare Programs, the educational level, and information levels in mass communication. Free access to Family Welfare information provided through the Health Care System, is in some cases unfortunately counteracted by cultural attitudes. Frequently misinformation and inadequate information are reasons why a family does not go in for limiting its size.

The greatest challenge the world now faces is how to supply its exploding human population with the resources it needs. It is evident that without controlling human numbers, the Earth's resources will be rapidly exhausted. In addition economically advanced countries and rich people in poorer countries use up more resources than they need.

The first 'green revolution' in the '60s produced a large amount of food but has led to several environmental problems. Now, a new green revolution is needed, to provide enough food for our growing population, that will not damage land, kill rivers by building large dams, or spread at the cost of critically important forests, grasslands and wetlands.

Human populations will inevitably expand from farm lands into the remaining adjacent forests.

Many such encroachments in India have been regularised over the last few decades. But forest loss has long-term negative effects on water and air quality and the loss of biodiversity is still not generally seen as a major deterrent to human well-being. The extinction of plant and animal species resulting from shrinking habitats threatens to destroy the Earth's living web of life.

Energy use is growing, both due to an increasing population, and a more energy hungry lifestyle that increasingly uses consumer goods that require large amounts of energy for their production, packaging, and transport. Our growing population also adds to the enormous amount of waste.

With all these linkages between population growth and the environment, Family Welfare Programs have become critical to human existence.

ENVIRONMENT AND HUMAN HEALTH

- Living entities depend upon their environment for energy requirements.
- Some of these requirements are pure water, clean air, unadulterated and nutritious food, a disease-free community to live in, etc.
- These factors are known to add to the longevity of human history.
- It is also a known fact that sanitation, agriculture, treated water, and personal and community hygiene have an impact on human health.
- One cannot overlook the fact that apart from supporting and nurturing human life, it can also cause diseases.
- One of the most common causes of death rate is the lack of necessities.
- Environmental risks can increase the chances of contracting heart diseases, cancers, and various other illnesses.
- Untreated drinking water, poor hygiene, and improper sanitation cause infectious diseases such as cholera, diarrhea, dengue, etc.

Impacts of the environment on human health:

- The environment relates to all the living and non-living things surrounding us.
- The environment has a great impact on human health.
- We interact with the environment daily.
- It is very much essential to keep our environment healthy to protect our lives from different environmental hazards.
- The environmental hazards are physical, chemical, and biological hazards.
- Examples of physical hazards are airborne particles, humidity, equipment design, radiations, etc.
- Examples of biological hazards are viruses, microbial agents, insects, rodents, animals and plants, etc.
- Examples of chemical hazards are pesticides, insecticides, herbicides, lead, acids, chlorine, and other caustic substances.
- There are a minute amount of chemicals and toxins in the daily food we eat, the breathing air, and our drinking water.

- The effects of these environmental hazards include cancers, respiratory system disorders asthma, allergies, and other illnesses.
- Many infectious diseases in this environment are all carried by pathogens.

ENVIRONMENTAL EDUCATION & WOMEN EDUCATION

It is now widely acknowledged that the impact of human activities on environment is significant

and will have serious consequences for future generations. Environment education has a significant role in making the youth conscious about their environment, adopting green social behaviour and thus responding to the environment crises. Recognizing the importance and need of environment education, India has initiated several efforts including making the environment education compulsory at all level of education. Today when environmental conditions are changing adversely and all living beings are suffering from the negative consequences of environmental pollution and climate changes, there is a need to reorient the curriculum of environment education for making it more attractive and responsive to the local environmental issues. Moreover, related policies are also needed to be restructured for sensitizing the people, especially school and college level students about the issues related to environment management.

The components of environmental education are:

- Awareness and sensitivity to the environment and environmental challenges
- Knowledge and understanding of the environment and environmental challenges
- Attitudes of concern for the environment and motivation to improve or maintain environmental quality
- Skills to identify and help resolve environmental challenges
- Participation in activities that lead to the resolution of environmental challenges

WOMEN EDUCATION

Women are the building blocks of society. They play a vital role in empowering every aspect of society and the nation. A nation is considered as well established and empowered only when the female population of the country is established, empowered, and safe. Education is that key element that helps every individual conquer the greatest war and also create the most impactful changes in the world.

A woman is such an individual who has the knowledge and temperament to create lives with meaning. Promoting women's education is as necessary and useful as oxygen is for breathing. India has been able to generate some of the famous leaders who are female. Yet, in most of the portions of the country, women still lack the benefit of getting an education and are deprived of their basic amenities and rights.

Importance of women education:

1. Elimination of crime against women: Education plays a vital weapon in eliminating manage social crimes and evils against women prevailing in society.. Social customs such as Sati, female infanticide, dowry , class trade and other harmful customary practice can be eradicated through female education. An educated women stands up for the injustice patted against women in the family or society against other girls or women .She is a pivotal in a civilized society and influences the beliefs and thoughts of its members.

2. self-Reliance: Education is vital for women as it makes women become self-reliant and eliminates the need to depend on a third person for her and her family survival. She becomes aware of a rights and Employment on an equal plank with men and finds the needs of a family. Financially independent woman raise her voice against the prevailing old social customs and injustice.

3. Improvised standard of living: Female education improvisers and elevates the standard of living. A family relying on double wages leads to a more satisfied and happy family in comparison to a family that relies on a single parent income. Two incomes under the same roof improve the quality of living and ensure to facilitate the importance of female education in the family and Society. An educated woman equally pays as the male member and adds and elevates the family's financial needs and the standard of family.

4. Prevent social exclusion: An uneducated woman is likely to work as domestic help or in extreme cases become a victim of flesh trade over the opposite gender. Women often get secluded from society who spends their life as domestic help or any other manual jobs. The seclusion or exclusion of women by society leads to Physical as well as psychological taumas ailments. An educated women brews balance the society.