Unit 6
Social Issues and The Environment

Contains

15 Topics

25 Power Point Slides

Gautam Gupta, Professor, Department of Economics, Jadavpur University

From Unstable to Sustainable Development-I

- Rich nations of the world consume resources, especially non-renewable natural resources like coal and oil at a break-neck pace.
- Unfettered consumption and greed has begun to create energy shortage, pollution, global warming and many other ills.
- It is now recognised that this model of growth and development is unsustainable.
- World Commission on Environment and Development defines Sustainable Development as “Development that meets the needs of the present generation without compromising the needs of the future generation to meet their needs”

From Unstable to Sustainable Development-I

- Sustainable development requires that for any activity that brings about economic growth, the corresponding environmental impact must be studied and negative aspects addressed.
- Major project like large dams, mining industries and major highways should be restrained.
- Unfettered consumption must be checked.
- Environmental impact assessment (EIA) must be conducted before proceeding.

Urban Problems Related to Energy-I

- Energy needs are typically very high in urban agglomerations.
- In India, housing made of traditional material like mud and straw handled hot temperature better.
- In modern housing, the use of brick, concrete, aluminum and glass makes buildings hot and requires large number of fans or huge air–conditioning units.
- High-rise building consume huge amount of electricity to operate lifts, pump water and for illumination.

Urban Problems Related to Energy-II

- Modern cooking is done with kerosene, natural gas, LPG or electricity. This consume large amount of fossil fuels.
- Urban transport causes excessive number of cars to be on the road, congestion, waste of time and air pollution and respiratory diseases.
- Efficient public transit systems like metros should be used. Fuel should be saved. Electricity should not be wasted.

Rain Water Harvesting and Watershed Management-I

- Clean, usable water has become a scarce item in the 21st century.
- Modern agriculture based on HYV seeds require massive amount of irrigation water.
- Dams and irrigation tamper with river courses leaving downstream areas nearly dry.
- Deforestation increases surface run offs decreasing recharging of ground water.
- Excessive use of ground water for irrigation and urban use causes the water table to drop.

Rain Water Harvesting and Watershed Management-II

- Urban and industrial effluents pollute water bodies, lake and rivers.
- Urban agglomeration generate massive amount of waste water from sewage, washing and other urban uses.
- All this is leading to rising demand and falling supplies of usable water and massive water shortage.

Rain Water Harvesting and Watershed Management-III

- The solution lies in conserving water, water recycling, harvesting of rain water and managing local watersheds more efficiently.
- Using drip irrigation to supply water to the root of plants- needs less water to grow food.
- Urban life wastes lots of water. Water wastage should be prevented. We all can do a little.
- Pani Panchayet movement initiated by Vilasrao Salunkhe can manage local water sheds better.
- Collecting rainwater in terraces and roofs and using them at source should be encouraged.

Resettlement and rehabilitation of people: Its problems and Concerns-I

- Large projects like mines, highways or even the notification of a National Park will displace large number of people.
- It is expected that such people would be given good, arable land for resettlement.
- In an overpopulated country such as ours there is never enough arable land available.
- Resettlement seldom take place in practice and may sometimes take decades. Often only wasteland is offered.
- Large Dams have been the greatest cause behind the eviction of people.

Resettlement and rehabilitation of people: Its problems and Concern-II

- Tehri Dam, when finished will submerge Tehri town and 100 villages. This is opposed by the local people.
- Tribal people are often the most significant victims of eviction.
- *Narmada Bachao Andolon* is the greatest battle of indigenous people over land for a large dam.

Environmental Ethics: Issues and Possible Solutions -I

- Environmental ethics deal with rights of people and other living being that are fundamental to their existence.
- Should there be huge disparity in the use of natural resources between rich nations and poor nations and between rich people and poor people?
- Sharing of the Gross Nature Product must be made more equitable.
- Tribals and women are particularly vulnerable regarding the use of natural resources.

Environmental Ethics: Issues and Possible Solutions -II

- People with traditional life styles like fishermen and artisans have a right to live in the way they choose.
- Even when nature is “recreated” the poor are often excluded.
- All creatures big and small, land or water animals and plants have a right to exist and should not be slaughtered to serve human needs.

Climate Change, Global Warming, Acid Rain, Ozone Layer depletion, Nuclear accidents and Holocausts

- About 75% of solar energy reaching the earth's surface is absorbed. The rest is reflected back. This keeps the earth warm and fit for life.
- Green house Gases such as Carbon Dioxide traps heat. As we burn more fossil fuels like oil and coal to make electricity, the amount of carbon dioxide in air rises. This traps more heat and the temperature of the earth rises.
- This results in melting of polar caps and glaciers. Average sea level rises and low-lying land goes under water.
- Sudden changes in climate may also happen. Hurricanes and typhoons result. This increases desertification, food shortage and vector-borne diseases.

Climate Change and Global Warming

- Human activities involving industrialisation and population growth has greatly increased energy demand in the last 100 years.
- This has resulted in massive increase in fossil fuel consumption that is petroleum and coal.
- Burning of fossil fuels result in Carbon Dioxide emissions. CO_2 and other Green House Gases have increased by 31% in this period.
- With increasing deforestation, this CO_2 has nowhere to go.
- This is the main reason behind Global Warming and rise in earth's temperature.

Acid Rain

- Burning of fossil fuels result in release of Oxide of Sulphur (SO_X) and Nitrogen (NO_X).
- These react with water vapour in the air to form Sulphuric or Nitric Acid. They are carried up in the atmosphere and return to the earth in the form of Acid Rain.
- Acid rain dissolves and washes away nutrients in the soil. They wash away the nutrients needed by plants.
- Acid rain affects rivers and wetlands, aquatic life, disrupts food chains and destroy entire ecosystems.

Depletion Ozone Layer-I

- Ozone (O_3) is a poisonous gas and a dangerous pollutant at ground level.
- A layer of ozone (ina mixture with oxygen) exists in the stratosphere 20 to 50 km above earth's surface. Ozone molecules reflect the Ultraviolet rays (UV) coming from the sun and protects life on earth.
- Chemical such as Chlorofluorocarbons (CFC) from refrigerators and aerosol propellants release chlorine that combines with ozone. Thus only oxygen is left in the ozone layer and there is nothing to stop the UV rays.

Depletion Ozone Layer-II

- This causes skin cancer, cataracts and other diseases.
- Thinning of ozone layer has been noticed over Antarctica and Australia.
- Mankind agreed at Montreal (1987) to ban CFC. As a result the ozone layer is being regenerated.

Nuclear Accidents and Holocausts-I

- Nuclear energy is a clean and cheap substitute to energy from fossil fuels.
- Though greatly beneficial to mankind this form the energy has many problems.
- When accidents happen at Nuclear power plants massive radioactivity is released .
- This can causes huge loss of human life, long term illness like cancer, thyroid, tumours.

Nuclear Accidents and Holocausts-II

- Three Mile Island (USA-1979) and Chernobyl (USSR-1986) are important examples.
- Disposal of Nuclear Waste also remains a major problem
- Nuclear weapons used in war cause holocausts. Hiroshima and Nagasaki (Japan 1945) are examples.

Wasteland Reclamation

- Loss of trees and vegetation cover causes soil to erode.
- Cultivable land can turn into wasteland in this way.
- Reclaiming wasteland for cultivation and other good uses remain a priority.
- Wasteland can be reclaimed by reducing the salt content. This can be done by leaching and flushing using Gypsum, Urea, Potash, and Compost.
- Agriculture can be mixed with forestry through an integrated system.
- Certain indigenous tree species that adopt to alkaline soil can be used to reclaim wasteland.

Consumerism & Waste Products-I

Reduce, Reuse, Recycle

- Current consumption patterns involving high degree of consumerism are very wasteful.
- Goods produced for one time use create massive amounts of solid waste.
- Packaging material for white goods are resource intensive, wasteful and contribute to solid waste.
- Two hundred billion plastic cups, cartons, cans and bottles are thrown away every year.

Consumerism & Waste Products-II

Reduce, Reuse, Recycle

- Reduction or ban on certain types of plastic items can be a solution.
- Recycling as much as we can must be practiced.
- Reduction of gross consumerist life styles must be encouraged.

Environmental Laws-I
The Environmental (Protection) Act -1986

- This Act was passed to give Government a comprehensive power to take action in environmental matters.
- It gave power to the Central Pollution Control Boards (CPCB) and State Pollution Control Boards (SPCBs) to set permissible limits for air pollution, water pollution and release of hazardous substances.
- Other important laws in this area are Air (Prevention and control of pollution) Act 1981and the water (Prevention and control of pollution) Act 1974.

Environmental Laws-II

- The earliest law was the wildlife (Protection) Act 1972. This act established National Park and Wildlife Sanctuaries. This act launched Project Tiger and prevented trade in animal body parts.
- Forest (conservation Act)1980/1988 is also important.

Enforcement of Environmental Legislation

- All major Development projects- government or private – need an Environmental Impact Assessment by a competent organisation. It lists local flora, fauna, people and ecosystems.
- Citizens actions and action groups can act as watch-dogs against willful environmental damage by resorting to prayers, petitions, media publicity, *dharnas* or Public Interest Litigation (PIL).
- Public awareness at the local level is extremely important. Events commemorating World Environment Day, Earth Day, Wet land Day contribute to this end.
- Spend a few minutes to consider how YOU can Contribute.