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# **ENVIRONMENT MANAGEMENT**

For Internal Circulation and Academic  
Purpose Only

# PROGRAMME EDUCATIONAL OBJECTIVES: PEO

- Will be recognized as a creative and an enterprising team leader.
- Will be a flexible, adaptable and an ethical individual.
- Will have a holistic approach to problem solving in the dynamic business environment.

# 3T2 – Environnement Management


## Course Outcomes

- CO1-Ability to explain the need and importance of sustainable development and design& utilize a calendar of environmental activities to create public awareness.
- CO2-Ability to analyse the problems associated with non renewable resources and proposes solutions for conservation of these resources.
- CO3-Ability to define the types of ecosystems and justify the importance of conservation of biodiversity.
- CO4-Ability to assess the impact of different types of pollution (Air, Soil, Water, Noise, Thermal & Nuclear Pollution) on health, environment and industry.
- CO5-Ability to predict the harmful effects of climate change and examine the roles of various (Central, State & Local) bodies in pollution control.
- CO6-Ability to determine the problems associated with human population explosion and social issues in environment protection. Recommend possible solutions to these problems.

# UNIT IV

## Unit IV: Human Population and Social Issues in Environment:

Global population growth, variations among nations, Population explosion- causes, impact on society and environment, Family welfare Programmes-methods of sterilization; Infectious diseases, water related diseases, risk due to chemicals in food. **Social Issues:** Construction of dams: problems and concerns of resettlement, rehabilitation of affected people; Environmental ethics– issues and possible solutions, resource consumption patterns and need for equitable utilization; Equity disparity in western and eastern countries; Urban and rural equity issues; Need for gender equity.



# **UNIT IV - Human population & environment**

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- *Too many people brings suffering to the land, and the land returns its suffering to the people*  
- *Otto Soemarwato*
- *Everywhere on the ground lay sleeping natives – hundreds and hundreds. They lay stretched at full length and tightly wrapped in blankets, heads and all. Their attitude and rigidity counterfeited death*  
- *Mark Twain on a nocturnal-drive in Bombay 1896*

# Global population growth-Effects

- Global human population, 6 billion at present, will cross the 7 billion mark by 2015.
- Human needs cannot be supported by the Earth's limited natural resources
- Fossil fuel from oil fields will run dry.
- Difficult to meet the demands for food from existing agro systems.
- Industrial growth will create more problems due to pollution of soil, water and air.
- Seas will not have enough fish.



# Global population growth-Effects

- Larger ozone holes will develop due to the discharge of industrial chemicals into the atmosphere
- Global warming will lead to a rise in sea levels
- Water ‘famines’ will create unrest and eventually make countries go to war.
- Degradation of ecosystems will lead to extinction of thousands of species
- These are only some of the environmental problems related to an increasing human population
- These effects can be averted by creating a mass environmental awareness movement

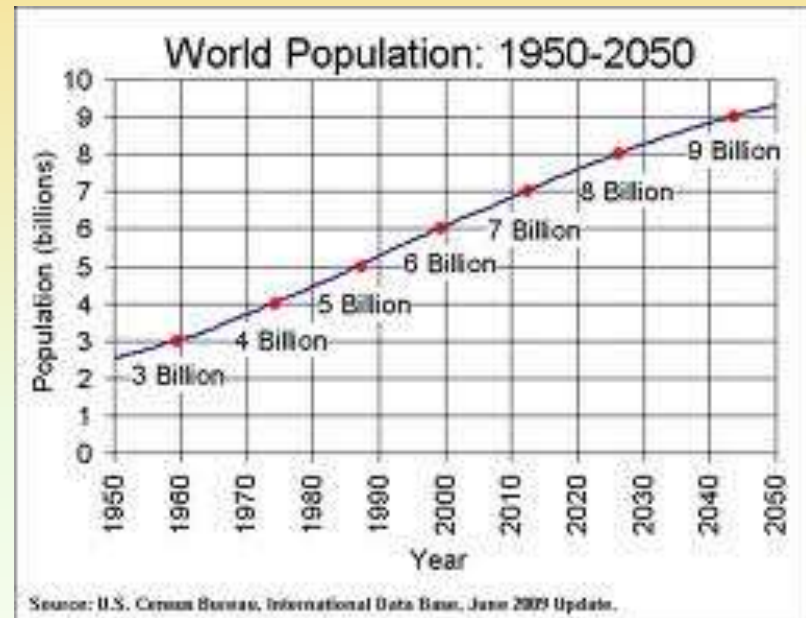


# Global population growth

- ▶ Increase in production per capita of agricultural produce at a global level ceased during the 1980's.
- ▶ In some countries, food shortage has become a permanent feature.
- ▶ Famines due to drought have become more frequent
- ▶ 15% of the world's population in the developed world earns 79% of income
- ▶ Disparity in per capita resources used in a **'developed' country** vs a **'developing' country** is extremely large
- ▶ Development strategies for short-term gains have led to breakdown of Earth's ability to replenish the resources

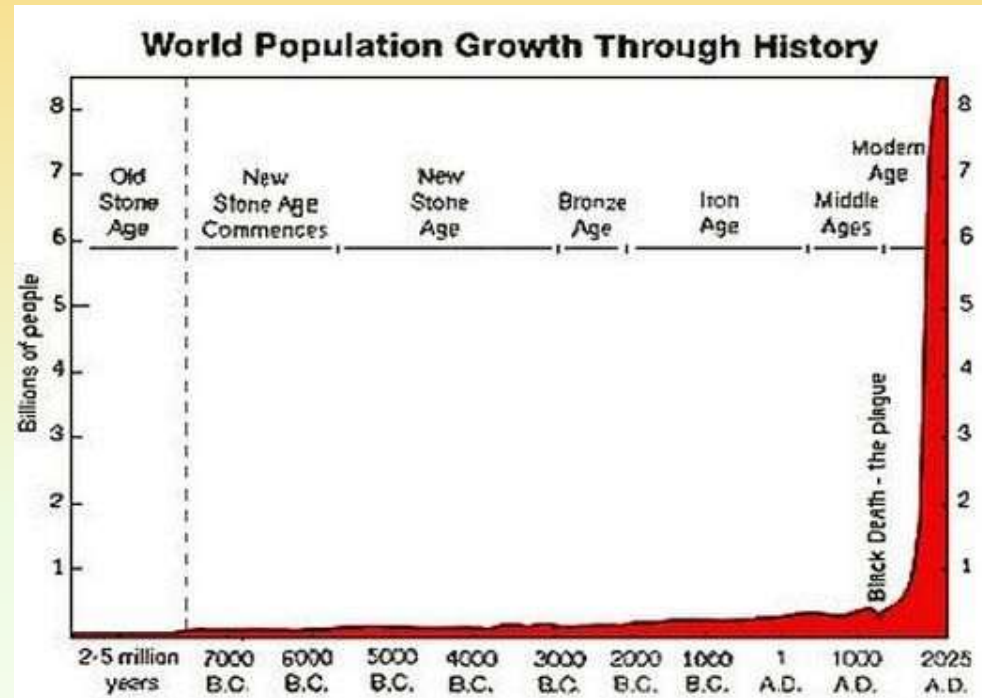
# Global population growth

- ▶ The world population is growing by more than 90 million per year, of which 93% is in developing countries.
- ▶ This prevents their economic development
- ▶ If population growth is controlled, it will still grow to 7.27 billion by 2015.
- ▶ If no action is taken it will become a staggering 7.92 billion



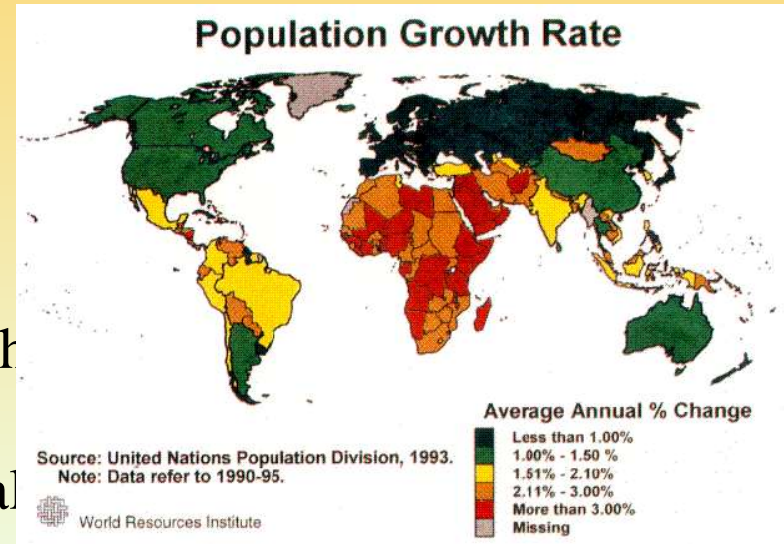
# Global population growth

- ▶ Human population growth increased from:
  - 1 to 2 billion, in 123 years.
  - 2 to 3 billion, in 33 years.
  - 3 to 4 billion, in 14 years.
  - 4 to 5 billion, in 13 years.
  - 5 to 6 billion, in 11 years
- ▶ Affluent societies consume per capita more energy and resources



# Population Growth: Variation among nations

- ▶ Population growing rapidly in most developing countries such as India and China
- ▶ Africa also sees rapid growth
- ▶ In the developed world population growth has slowed down
- ▶ Population growth shows a general global decline, variations seen in the rate of decline in different countries
- ▶ Cultural, economic, political and demographic reasons that explain the differences in the rate of population control in different countries



# Population Explosion – Family Welfare Program

- ▶ India seriously took up an effective Family Planning Program which was renamed the *Family Welfare Program*
- ▶ ‘*Hum do hamare do*’ has taken decades to be effective
- ▶ Use of contraceptives higher in developed countries – 68%, and lower in developing countries - 55%.
- ▶ Female sterilization is most popular method of contraception in developing countries
- ▶ India and China have been using permanent sterilization more effectively



# Population Explosion – Family Welfare Program

- ▶ Informing the public about the various contraceptive measures that are available is of primary importance
- ▶ The decision to limit family size depends on a couple's background and education
- ▶ Free access to Family Welfare information provided through the Health Care System, but sometimes counteracted by cultural attitudes
- ▶ Misinformation and inadequate information are reasons why a family does not go for limiting its size



# Urbanization

- ▶ In 1975, 27% of the people in the developing world lived in urban areas
- ▶ By 2000 this had grown to 40% and by 2030 this will grow to 56%
- ▶ Developed world: 75% of population living in the urban sector
- ▶ Urban population growth is both due to **migration of people** to cities from the rural sector in search of better job options and **population growth within city**

Mega cities in India	Population (in millions) in 2001	Projection (in millions) for 2015
Mumbai	16.5	22.6
Kolkata	13.3	16.7
Delhi	13.0	20.9

# Urbanization

- ▶ As a town grows into a city it eats up surrounding agricultural land, forests etc.,
- ▶ Also grows skywards with high rise buildings.
- ▶ Cities lose its open spaces and green cover
- ▶ This destroys the quality of life in the urban area.
- ▶ Good urban planning is essential for rational landuse planning, upgrading slums, improving water supply, drainage, sanitation, effective waste water treatment and public transport





# Urban Poverty and the Environment

- ▶ A third of the poor people in the world live in urban centres
- ▶ One billion urban people in the world live in inadequate housing, mostly in slum areas
- ▶ Urban slums and suffer from water shortages and unsanitary conditions
- ▶ Illegal slums often develop on Government land, along railway tracks, on hill slopes, riverbanks, marshes, etc
- ▶ Urban poverty is even more serious than rural poverty
- ▶ Urban Poverty leads to crime rates, terrorism, unemployment, and serious environmental health related issues



# Case Study: Dharavi

- ▶ In Mumbai, Dharavi is **one of the world's largest slum areas**
- ▶ Dharavi has a population of between **600,000 and over 1 million people**
- ▶ In expensive Mumbai, Dharavi provides a cheap alternative where rents were as low as **Rs.200 per month**
- ▶ Dharavi exports goods around the world. The total (and largely illegal) turnover is estimated to be between **US\$500-650 million per year**



# Case Study: Dharavi

- ▶ In addition to the traditional pottery and textile industries there is an increasingly **large recycling industry**, processing recyclable waste from other parts of Mumbai.
- ▶ The district has an estimated 5000 businesses and **15,000 single-room factories**
- ▶ Dharavi has severe problems with **public health**, due to the scarcity of toilet facilities, due in turn to the fact that most housing and 90% of the commercial units in Dharavi are **illegal**



# Dharavi Redevelopment Plans

- ▶ There have been many plans since 1997 to redevelop Dharavi like the former slums of Hong Kong
- ▶ In 2010, it is estimated to cost Rs 15,000 core to redevelop
- ▶ The latest urban redevelopment plan is proposed for the Dharavi area, managed by American-trained architect Mukesh Mehta
- ▶ The plan involves the construction of 30,000,000 square feet of housing, schools, parks and roads to serve the existing 57,000 families residing in the area, along with 40,000,000 square feet of residential and commercial space for sale.



# Dharavi Redevelopment Plans

- ▶ There has been significant local opposition to the plans, largely because existing residents are due to receive only 225 sq. ft of land each.
- ▶ Furthermore, only those families who lived in the area before the year 2000 are slated for resettlement.
- ▶ Concerns have also been raised by residents who fear that some of their small businesses in the "informal" sector may not be relocated under the redevelopment plan.
- ▶ The government has said that it will only legalize and relocate industries that are not "polluting."



# Environment and Human Health

- ▶ Environmental health and human health are closely linked
- ▶ Development strategies that do not incorporate ecological safeguards often lead to ill health
- ▶ Development strategies that can promote health invariably also protect the environment.



# Environment and Human Health

- ▶ Millions of children die every year due to diarrhoea from contaminated water or food
- ▶ Millions have poor health from eating infected food, or using poor quality water for cooking food
- ▶ Millions suffer serious respiratory diseases
- ▶ Millions exposed to hazardous chemicals in their workplace or homes
- ▶ Thousands die due to traffic accidents
- ▶ Millions live in inadequate shelters



# Environment and Human Health

- The key factors are to control human population and consume less environmental goods and services which could lead to ‘health for all’.
- Unsustainable use of resources by growing population leads to unhealthy lives
- Poverty closely related to health and is a consequence of improper environmental management
- Inequitable sharing of natural resources and environmental goods and services, is linked to poor health



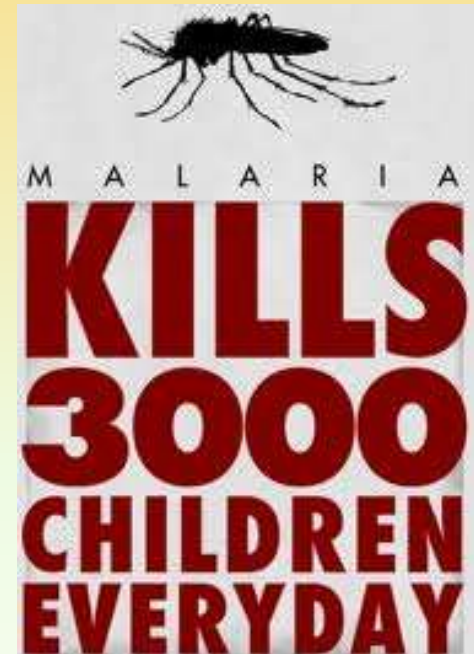
# Climate and Health

- ▶ Climate and weather have a powerful impact on human life and health issues
- ▶ Natural disasters (heavy rains, floods, hurricanes) severely affect health
- ▶ Poor people more vulnerable to the health impacts of climate than the rich
- ▶ Approx 80,000 deaths world-wide each year as a result of natural disasters - 95% in poor countries



# Climate and Health

- ▶ Heat waves cause heat-related illness and death (e.g. heat stroke)
- ▶ Climate plays an important role in vector-borne diseases transmitted by insects such as mosquitoes
- ▶ A heavy downpour, can greatly increase the mosquito population and trigger an epidemic



# Infectious Diseases

- ▶ Many infectious diseases have re-emerged – Malaria, TB
- ▶ Antibiotic resistance is leading to reemergence of diseases – E.g. multi-drug resistant TB
- ▶ TB kills approximately 2 million people each year
- ▶ Poorly managed TB programs are threatening to make TB incurable
- ▶ Drug resistant tuberculosis is caused by inconsistent or partial treatment



# Infectious Diseases - Malaria

- 40% of the world's population, mostly those living in the world's poorest countries, risk getting malaria
- Malaria, once under control, has now returned and is found throughout the tropical and sub-tropical regions
- Malaria parasites are developing unacceptable levels of resistance to drugs
- Clearing pools of stagnant water during the monsoons is effective in reducing mosquitoes

# Water-Related Diseases

- ▶ Water borne diseases
  - Caused by dirty water contaminated by human and animal wastes
  - Cholera, Typhoid, Diarrhoea
- ▶ Water based diseases
  - Aquatic organisms that live a part of their life cycle in water and another part as a parasite in man. Round worm, Guinea Worm in intestines
- ▶ Water related vector diseases
  - Insects as mosquitoes breed in stagnant water spread diseases such as malaria and filariasis.
- ▶ Water scarcity diseases
  - Caused when hands are not adequately washed: Leprosy, Tetnus

# Risks due to chemicals in food

- ▶ Food contaminated by chemicals is a major worldwide public health concern
- ▶ Contamination may occur through environmental pollution of the air, water and soil.
- ▶ Toxic metals, PCBs and dioxins, use of pesticides, animal drugs and other agrochemicals affect health
- ▶ Food additives and contaminants used during food manufacture and processing



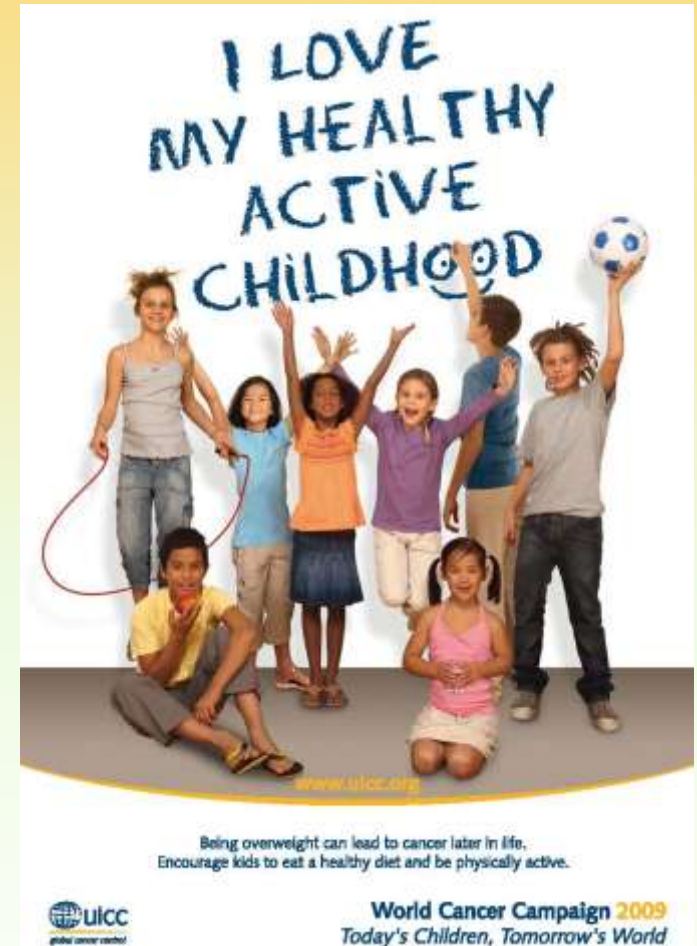
# Cancer and Environment

- ▶ 10 million people are diagnosed with cancer in the world every year
- ▶ 6 million deaths every year – or 12% of deaths worldwide
- ▶ Cancer is preventable by stopping smoking, providing healthy food and avoiding exposure to cancer-causing agents (carcinogens).
- ▶ Early detection and effective treatment is possible for one-third of cases



# Cancer – Prevention and Control

- ▶ Promotion of comprehensive national cancer control programs
- ▶ Building international networks and partnerships for cancer control
- ▶ Promotion of organized, evidence-based interventions for early detection of cervical and breast cancer.
- ▶ Development of guidelines on disease and program management
- ▶ Advocacy for a rational approach to effective treatments for potentially curable tumours
- ▶ Support for low-cost approaches





# Human Rights

- ▶ Several environmental issues are closely linked to human rights.
- ▶ These include:
  - ▶ Equitable distribution of environmental resources
  - ▶ The utilisation of resources
  - ▶ Intellectual Property Rights (IPRs)
  - ▶ Conflicts between people and wildlife
  - ▶ Resettlement issues around development projects such as dams and mines,
  - ▶ Access to health to prevent environment related diseases.

# Equity

- ▶ Primary concerns in environmental issues is how wealth, resources and energy must be distributed in a community
- ▶ Difference between the developed world and developing countries is high
- ▶ A better lifestyle for men as against women is inherent in many cultures
- ▶ Sustaining resources for future generations
- ▶ Requires ethic in which an equitable distribution is part of everyone's thinking



# Nutrition and Health Rights

- ▶ Proper nutrition and health are fundamental human rights
- ▶ Nutrition affects and defines the health status of all people
- ▶ Malnutrition makes people more vulnerable to disease and premature death
- ▶ A human rights approach is needed to support millions of people left behind in the health revolution.
- ▶ Equity must begin at the bottom, along with a healthy environment, improved nutrition, and sustainable lifestyles



# Intellectual Property Rights and Community Biodiversity Registers

- ▶ Tribals living in forests, have used local plants and animals for generations
- ▶ This storehouse of knowledge leads to many new ‘discoveries’ for modern pharma products
- ▶ The revenue from such finds’ goes to the pharma industry that has done the research and patented the product.
- ▶ This leaves the original tribal user with nothing
- ▶ To protect the rights of indigenous people who have used these products, a possible tool is to create a Community Biodiversity Register
- ▶ Register of local products and their uses so that its exploitation by pharmas would pay a royalty

# Intellectual Property Rights

- A US company was granted a patent for discovering extracts of *arhar* (pigeon pea or *Cajanus cajan*) in the treatment of diabetes, hypoglycemia, obesity and blockage of arteries.
- The use of pigeon pea extracts in India is well known.
- CSIR has challenged this patent as it infringes on India's traditional knowledge,
- Challenging the patent is difficult, as India's scientific documentation of its traditional knowledge is quite poor

# Environmental Values

- ▶ Values lead to a process of decision making which leads to action.
- ▶ For Environmental Values, this process is learned through an understanding and appreciation of Nature's oneness and the importance of its conservation
- ▶ Concepts of what is right or wrong behaviour changes with time.
- ▶ Each action must be linked to its environmental consequences in his/her mind so that a value is created that leads to strengthening pro-environmental behaviour



# Valuing Nature

- ▶ Values deal with ones own principles and standards from which we judge what is right and wrong behaviour
- ▶ The most fundamental environmental sentiment is to value Nature herself
- ▶ We must appreciate that we belong to a global community that includes another 1.8 million known living forms
- ▶ Environmental movement focuses management of the environment for the ‘benefit’ of man
- ▶ Deep Ecology promotes an approach that is expected to bring about a more appropriate ecological balance on Earth and is akin to a spiritual approach to Nature

# Valuing Cultures

- ▶ Every culture has a right to exist.
- ▶ Tribal people are frequently most closely linked with Nature
- ▶ We have no right to foist on them our own modern way of life.
- ▶ The dilemma is how to provide them with modern health care and education that gives them an opportunity to achieve a better economic status without disrupting their culture and way of life.
- ▶ This will happen only if we value their culture and respect their way of life.





# Social Justice

- It is duty of the better off to protect rights of poor who do not have the means to fight for their rights
- If this is not respected the poor will eventually rebel, anarchy will spread
- The developing world would face a crisis earlier than the developed countries unless the rights of poor people that are fundamental to life are protected.



# Human Heritage

- ▶ Human Heritage: the undisturbed wilderness, a traditional rural landscape, the architecture of a traditional village or town, historical monument or place of worship
- ▶ Heritage preservation is growing concern because much of it has been undervalued during the last several decades and is vanishing
- ▶ We need to lobby for the protection of the wilderness and our glorious architectural heritage



# Case Study: The Taj Mahal

- ▶ The Taj Mahal, one of India's most famed monuments, has been gradually yellowing due to air pollution
- ▶ Plans are afoot to give the white marble structure a mud bath - the mud will absorb the dirt already accumulated as it dries and is then washed off.
- ▶ The cost has been assessed at US\$230,000, and will need to be repeated every two to three years.
- ▶ Roughly 3,000,000 tourists visit the monument every year, and visitors are required to park 2 miles away from the monument in an effort to reduce pollution around the area.



# Common Property Resources

- Several commonly owned resources that all of us use as a community
- The water, the air that we all breathe, the forests and grasslands which maintain our climate and soil, are all common property resources
- Managing forests through village level forest protection committees has shown that if people know that they benefit from forests, they will protect them
- Sharing power to control forests between Forest Department and locals

# HIV/AIDS

- ▶ HIV causes AIDS through contact with tissue fluids of infected individuals, especially through sexual contact
- ▶ It reduces an individual's resistance to disease
- ▶ It causes infected individuals to suffer from a large number of environment related diseases
- ▶ In sub Saharan Africa where infection is high, it is leading to great suffering and poverty
- ▶ By 2007, India had an estimated 2.5 million infected individuals.



# HIV/AIDS

- ▶ There is a great need to organise AIDS education on prevention and management of the disease.
- ▶ This needs to be done through the formal educational sector and by using non-formal methods
- ▶ Education is also important to reduce the stigma and discrimination against these patients.



# Women and Child Welfare

- ▶ Several environmental factors that are closely linked to the welfare of women and children
- ▶ Each year, close to eleven million children worldwide are estimated to have died from the effects of disease and inadequate nutrition
- ▶ Major conditions include:
  - ▶ Respiratory Diseases
  - ▶ Gastro intestinal conditions
  - ▶ Measles
  - ▶ Malaria
  - ▶ Poverty-environment-malnutrition



# Women and Child Welfare

- ▶ Women, especially in lower income group families, both in the rural and urban sector, work longer hours than men
- ▶ Their work pattern differs and is more prone to health hazards.
- ▶ Women are often the last to get enough nutrition as their role in traditional society is to cook / feed the family
- ▶ The girl child given less attention and educational facilities compared to boys.





# Case Study: The *Chula* Issue

- ▶ **The Chula (Cooking stove ) issue**
- ▶ The WHO estimates that 1.6 billion early deaths occur annually from cooking stove pollution.
- ▶ 400,000 to 550,000 children under five and women die each year in India due to indoor smoke.
- ▶ Chula smoke is the third highest cause of disease and death after dirty water and lack of sanitation.
- ▶ By providing access to clean water, sanitation, food and ventilated homes, over half the diseases and premature deaths could be avoided in India.



# Information Technology in Environment and Human Health

- ▶ The understanding of environmental concerns and issues related to human health has exploded during the last few years due to the sudden growth of IT
- ▶ Use of IT that aid environmental studies include software such as using Geographical Information Systems (GIS)
- ▶ The Internet has made it extremely simple to get the appropriate environmental information
- ▶ Not only assists scientists and students but is a powerful tool for public awareness
- ▶ Specialised software can analyse data for epidemiological studies, population dynamics and a variety of key environmental concerns.

# Case Study: Bhoomi Project

- Karnataka's GIS scheme, Bhoomi, has revolutionized the way farmers access their land records.
- Farmers can now get a copy of the records of rights, tenancy and crops from a computerized information kiosk without harassment and bribes.
- Karnataka has computerized 20 million records of land ownership of 6.7 million farmers in the State.

# Effects of overpopulation

- **Inadequate fresh water**
- **Depletion of natural resources**
- **Increased levels of air pollution, water pollution, soil contamination and noise pollution**
- **Deforestation and loss of ecosystems**
- **Changes in atmospheric composition and consequent global warming**
- **Irreversible loss of arable land and increases in desertification**

# **Effects of overpopulation contd...**

- **Mass species extinctions**
- **High infant and child mortality**
- **Starvation, malnutrition**
- **Low life expectancy**
- **Unhygienic living conditions**
- **Elevated crime rate**
- **Lower wages**



# **SOCIAL ISSUES AND ENVIRONMENT**

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## **Construction of dams: problems and concerns of resettlement, rehabilitation of affected people**

- Dams have physically displaced some 40 – 80 million people worldwide.
- Millions of people living downstream from dams, particularly those reliant on natural floodplain functions and fisheries have also suffered serious harm.
- Many of displaced were not recognized as such and therefore were not resettled or compensated.

- Issues concerning the resettlement and rehabilitation
- The compensation for the lost land is often not paid or is delayed.
- If paid the amount is usually pitifully small.
- Generally the new land offered is of poor quality and the refugees are unable to make a living.
- Basic infrastructure and amenities are not provided in the new area.
- Very often temporary campus becomes permanent settlement
- When tribal groups are displaced, they do not get any compensation since they have no legal title to the land





# **Environment Legislation and Institutions**

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# Environment (Protection) Act 1986

- Enacted in view of the Bhopal Gas Tragedy in 1984
- The purpose of the Act is to act as an "umbrella" legislation designed to provide a frame work for Central government co-ordination of the activities of various central and state authorities established under previous laws,
- Enacted in May 1986



# EPA 1986 - Definitions

- **“Environment”** includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, microorganism and property;
- **“Environmental pollutant”** means any solid or gaseous substance present in such concentration as may be, or tend to be, injurious to environment;
- **“Environmental pollution”** means the presence in the environment of any environmental pollution;
- **“Hazardous substance”** means any substance or preparation which, by reason of its chemical or physico-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plant, micro-organism, property or the environment;
- **“Occupier”**, in relation to any factory or premises, means a person who has, control over the affairs of the factory or the premises and includes in relation to any substance, the person in possession of the substance;

# EPA 1986 – Chapter II

- **Reserved Forests**
- Power of Central Government to take measures to protect and improve environment
- Appointment of officers and their powers and functions.
- Power to give directions.
- Rules to regulate environmental pollution.



# EPA 1986 - – Chapter III

- **Prevention, Control and Abatement of Environmental Pollution**
- Persons carrying on industry, operation, etc. not to allow emission or discharge of environmental pollutants in excess of the standards.
- Persons handling hazardous substances to comply with procedural safeguard.
- Furnishing of information to authorities and agencies in certain cases.
- Power of entry and inspection.
- Power to take sample and procedure to be followed
- Establishment of Environmental Laboratories.
- Appoint or Recognise Government analysts.
- Reports of Government analysts may be used as evidence
- Penalty for contravention of the provisions of the act and the rules
- Offences by companies
- Offences by government departments

# EPA 1986 – Chapter IV

- Protection of action taken in good faith.
- Cognizance of offences.
- Information, Reports or Returns.
- Members, Officers and Employees of the authority constituted under section to be public servants
- Bar of Jurisdiction.
- Power to delegate.
- Effect of other laws.
- Power to make rules.
- Rules made under this act to be laid before parliament.



# The Water (Prevention and Control of Pollution) Act 1974

- Establishes an institutional structure for preventing and abating water pollution.
- It establishes standards for water quality and effluent.
- Polluting industries must seek permission to discharge waste into effluent bodies.
- The CPCB (Central Pollution Control Board) was constituted under this act.



# The Water Act 1974

- Provides for the **prevention and control** of water pollution and maintaining **wholesomeness** of water.
- The Act **defines terms** like pollution, sewage effluent, trade effluent, stream and boards.
- The Act **assigns the functions** to be carried out by the Central and State Boards.
- The Water Boards have **power to obtain information**, to take samples of effluents from any industry/establishment and to make surveys
- The Board has wide powers to **prohibit the use of any stream** or well for discharging any pollutant in it.



# The Water Act 1974

- The Act **prohibits disposal** of any poisonous, noxious or polluting matter or any matter causing obstruction to the proper flow of water in a stream.
- However, dumping of any material into a stream for the purpose of reclamation of land is not considered an offence.
- The Act provides for severe and deterrent **punishments for violation** of the Act, which includes fine and imprisonment.

# Wild Life Protection Act, 1972

- This Act was enacted for providing **protection to wild animals and birds.**
- Provides for the constitution of a Wild Life Advisory Board, appointment of Chief Wild Life Warden,
- Regulation of **hunting** of wild animals and birds, laying down the procedures for declaring areas as **sanctuaries.**
- National parks and biosphere reserves, and regulation of trade in wild animals
- **List of endangered species**, which is revised from time to time, is also included
- No one is permitted to hunt any wild animal, except Vermin, without a license from the chief Wild Life Warden.



# Wild Life Protection Act, 1972

- **A record of Wild Life** animals hunted or captured has to be maintained.
- Establishment of sanctuaries-national parks, game reserves, and closed areas.
- All wild life animals are the **property of the Government**.
- **Trade or Commerce** in wild animals and animal articles and trophies is strictly regulated.
- No person can cook or serve meat of wild animals in any eating-house without a license.
- **Penalties** for violating the provisions of the Act have also been laid down in the Act.

# Forest Conservation Act, 1980

- No forest land or any portion may be used for any non-forest purposes without the prior permission of the central Government
- The Act has been amended in 1988 for incorporating more stringent penal provisions against violators of the Act.



# Forest Conservation Act, 1980

- The scope of the definition of “non-forest purposes” was extended to include cultivation of tea, coffee, rubber, palms, oil-bearing plants, horticultural crops and medicinal plants.
- No State Government or other authority may issue order directing that any forest land or any portion thereof may be assigned by way of lease or otherwise to any private person or to any authority, corporation, agency or any other organization not owned, managed or controlled by Government.

# Issues in enforcement of environmental legislations

- **Lack of appropriate skills** amongst the law enforcement agencies.
- Inadequate infrastructural facilities.
- **Lack of proper understanding** of environmental laws.
- Lack of **coordination** among the law enforcement authorities and officers.
- **Jurisdictional conflicts.**
- **Shortage** of skilled and trained legal personnel.
- No **initiatives** are being taken to recruit law officers who possess knowledge, skills and understanding of environmental issues and laws.
- The **political and bureaucratic intervention** in day to day activities of the law enforcement

# Environment Impact Assessment

- It is a formal study process used to predict the environmental consequences of any development project.
- Ensures that the potential problems are foreseen and addressed at an early stage in project planning and design.
- Extrapolates from scientific knowledge to assess the problem consequences of some human interventions on nature



# Environment Impact Assessment

- EIA has to be made before starting a project
- .For analysis of environmental impacts, many professions and disciplines have to be involved. Like economic and engineering feasibility studies.
- EIA objectives:
  - Predict environmental impact of projects
  - Find ways and means to reduce adverse impacts
  - Shape project to suit local environment
  - Present the predictions and options to the decision-makers



# Environmental Auditing

- A management tool to objectively and systematically **evaluates environment management systems**
- An EA gathers information about what is or is not going well with an organization's environmental management system, and therefore acts as a "check" on the system.
- Objectives of EA:
  - Waste prevention and reduction:
  - Assessing compliance with regulatory requirements.
  - Placing environmental information in the public domain.

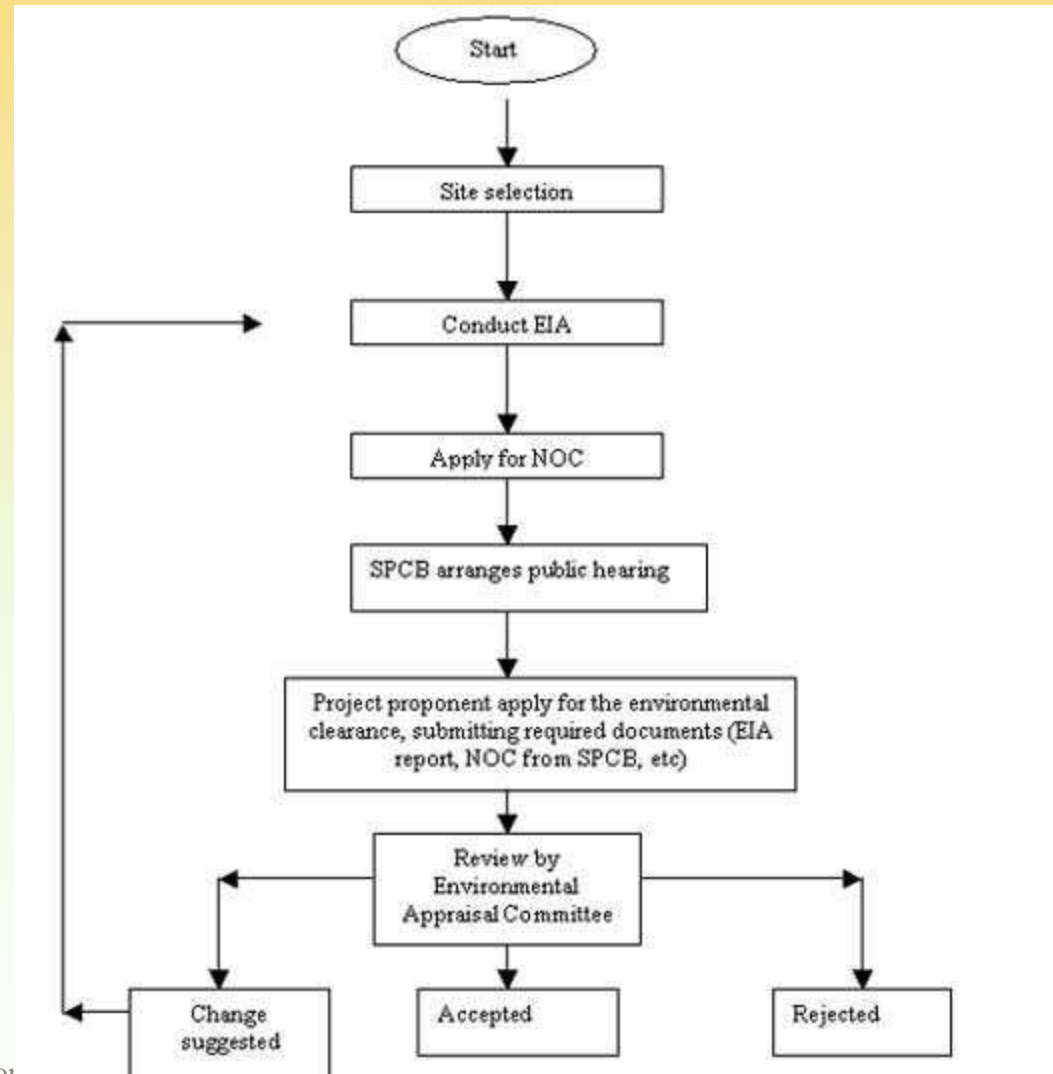
# Environmental Auditing - Benefits

- Provides assurance of compliance with environmental regulations, standards etc.
- Facilitates the development of environmental management systems and improvement in environmental performance.
- Increases management and employee awareness of environmental issues.
- Increases sharing of information.
- Reduces the potential for liability with potential.
- Cost savings and improved efficiency.
- Promotes "Good Practice".
- Providing better PR and Public Image and "Security" to Top Management

# Environmental Clearance Process

- The environmental clearance process is required for 39 types of projects and covers aspects like screening, scoping and evaluation of the upcoming project.
- The main purpose is to assess impact of the planned project on the environment and people and to try to minimise the same.

# Environmental Clearance Process



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# Environmental Clearance Process

## Industrial projects located in any of the following areas require environmental clearance

- • Religious and historic places
- Archaeological monuments
- Scenic areas
- Hill resorts
- Beach resorts
- Coastal areas rich in mangroves, corals, breeding grounds of specific species
- Estuaries
- Gulf areas

- Biosphere reserves
  - National parks and sanctuaries
  - National lakes and swamps
  - Seismic zones
  - Tribal settlements
  - Areas of scientific and geological interest
  - Defence installations, specially those of security importance and sensitive to pollution
  - Border areas (international)
  - Airports

# Environmental Clearance - Vedanta

- Vedanta Resources had been seeking environment clearance to its \$ 1.7 billion bauxite mining project in Orissa.
- Tribes say plans by UK-listed mining firm Vedanta to mine on holy land will destroy their way of life
- Environment Ministry rejecting the project, saying forest laws have been violated



THANK  
YOU

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