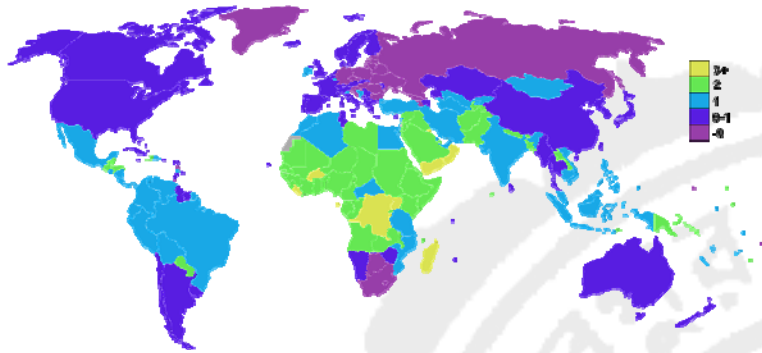




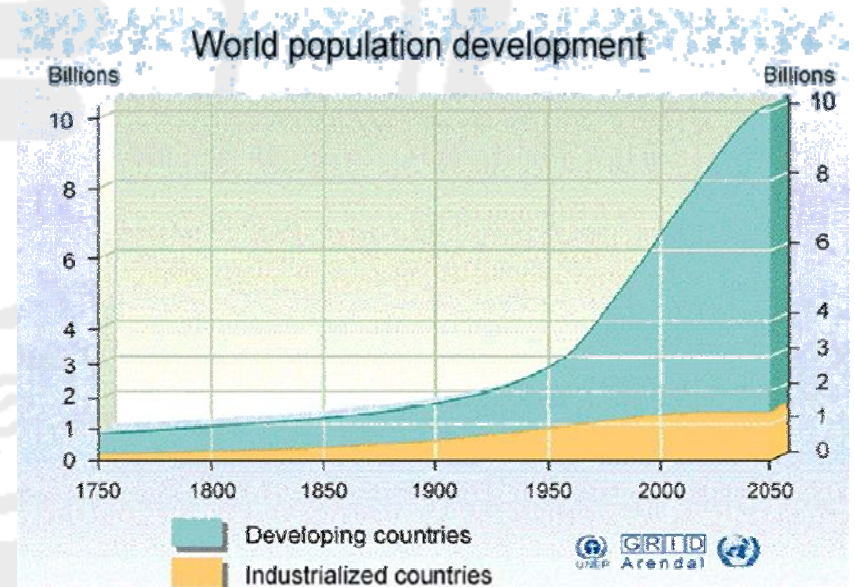
Unit : 7

Human Population and the Environment



7.1

Population Growth, Variation among Nations



This section notes

- ❑ The interface between the growth in human population and the environment
- ❑ Mounting pressure on the earth's finite resources by an intensifying population pressure
- ❑ The need for environmental conservation with view to avoiding conflict and war over resources caused by population pressure

The Global Population Picture

- ❑ The global human population in 2004 was around 6 billion
- ❑ It will cross the 7 billion mark by 2015
- ❑ The global growth rate
 - The world population is growing by more than 90 million per year
 - Will reach 7.27 billion by 2015 (if controlled)
 - Will reach 7.92 billion by 2015 (if not controlled)

Consequences of Uncontrolled Population Growth

- ❑ Fossil fuel from oil fields will run dry
- ❑ Existing agro systems will become too overburdened and unable to feed the many mouths
- ❑ Pastures will be overgrazed
- ❑ The industrial growth will reinforce pollution of:
 - soil
 - water
 - air
- ❑ Industrial gases will cause greater global warming leading to
 - a rise in sea levels
 - flooding of all low-lying areas
 - submerging of coastal agriculture as well as towns and cities

Consequences of Uncontrolled Population Growth

- ❑ Decline in the fish population in the seas
- ❑ Larger ozone holes, due to the discharge of industrial chemicals into the atmosphere
- ❑ Depletion of fresh water leading to water 'famines'
- ❑ Degradation of ecosystems leading to extinction of thousands of species which have a great role in the sustainability of the planet

Socio-political Consequences of Population Growth

- ❑ Escalation of conflict (and maybe also wars) between and amongst countries over control on natural resources will escalate
- ❑ Grave economic conflicts between biotechnologically advanced nations and the bio-rich countries over the control of regional bio diversity, vital for producing new medicinal and industrial products

Failure of existing development strategies

- ❑ Existing development strategies focus on the economic performance of the developing countries, whereas
 - The 15 per cent of the world population, who earn 79 per cent of all the incomes in the world, are based in the developed countries
 - This 15 percent along with the rich people in poorer countries consume per capita more energy and resources than they need

Strategies to deal with the crisis

- A new ethic envisaging a more equitable distribution of resources
- Creation of a mass environmental awareness movement
- Encouraging ordinary people to evolve their own informed strategies of averting environmental degradation
- Bringing about a change in the people's way of life

Differences between Developed and Under-developed Countries

- In the first half of the 1900s
 - Population growth slowing down in the developed world
 - Rapid population growth in the developing countries including India and China.

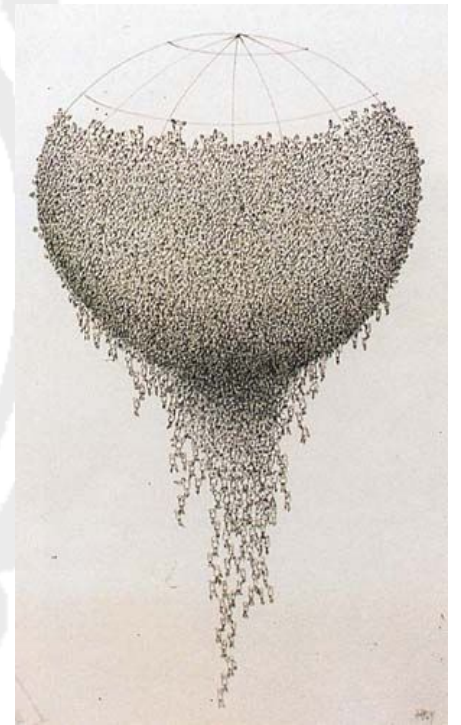
Changing Scenario in the Global South: Since 1970s

- ❑ 1970s – developing countries realized need to curtail population growth
- ❑ 1990s – growth rate decreasing in countries like China and India
- Sub-Saharan African countries continue to register high birth-rate.



7.2

Population Explosion: Family Welfare and Urban Planning



This section notes

- ❑ The implications of population explosion for the patterns of resource and energy use, with special reference to certain specific kinds of landscapes and habitats
- ❑ The need for adoption of family planning as one of the most efficacious methods of controlling population growth and preventing further environmental degradation
- ❑ The need for planned urban expansion to minimize environmental degradation caused by urbanization

Three Critical Contexts

- ❑ Coastal regions as critical eco-systems which are at the same time the world's most populous regions
- ❑ The remaining forests of the world that are threatened by the expanding human population in the adjacent farm lands and urban areas
- ❑ Urban areas as a critical site of population pressure and environmental degradation

Effects of Population Explosion

- ❑ Threatened destruction of the coastal areas as the world's most populous regions with critical ecosystems
- ❑ Impact of global climate change on the survival of the densely populated coastal areas
 - Depletion of fish population caused by excessive fishing to feed huge coastal population
 - The threat that the existing fish reserves will not sustain the coastal population for much longer

Effects of Population Explosion

- ❑ The remaining forests of the world under the threat of decimation by industrial expansion and extension of farm land
- ❑ Long-term negative effects on forest loss on the quality water and air
- ❑ The shrinkage of forest leading to destruction of plant and animal species as a consequence of the loss of the latter's accustomed natural habitats
- ❑ Loss of biodiversity leading to a major impairment of human well-being

Population Explosion and the Urban Situation

- ❑ The developed world is already highly urbanized with 75% of its population living in the urban sector
- ❑ In 1975 only 27% of the people in the developing world lived in urban areas
- ❑ By 2000 this had grown to 40% and by 2030 well informed estimates state that this will grow to 56%
- ❑ Population increase will continue in urban centres in the near future
- ❑ The UN has shown that by 2025 there will be 21 mega-cities, most of which will be situated in developing countries

Population Explosion and the Indian Urban Situation

- ❑ Today, more than 290 million people live in towns and cities in India
- ❑ There were 23 metros in India in 1991, which grew to 40 by 2001
- ❑ But the problem is that the modern urban centre creates environmental hazards both for itself and for its surrounding rural areas

Population Explosion and the Urban Situation

- ❑ Urban centres are already unable to provide
 - adequate housing
 - clean, edible water
 - drainage systems
 - growing energy needs
 - and ample opportunities for income generation

- ❑ As a town grows into a city it spreads horizontally destroying its own open spaces and green cover

- ❑ The modern city also grows vertically through its high rise buildings, multiplying the population density manifold

Population Explosion and the Urban Situation

- ❑ The number of poor people living in urban areas is rapidly increasing
- ❑ Urban poverty leads to environmental problems
- ❑ A third of the world's poor live in urban areas
- ❑ They live in unhygienic urban slums plagued by serious lack of infrastructure, viz., adequate water supply and proper sanitation

Population Explosion and the Urban Situation

As the city horizontally spreads and spills outwards, it

- ❑ decimates the surrounding agricultural land and natural areas such as:
 - forests,
 - grasslands
 - wetlands
- ❑ degrades the surrounding environment
- ❑ destroys bio-diversity and reinforces global warming through the proliferation of vehicular and other kinds of urban-specific pollution
- ❑ sucks resources from more and more distant rural areas

Population Explosion and the Urban Situation

- ❑ Energy use is severely affected as population explosion rapidly increases energy use
- ❑ The phenomenally growing population fosters a energy-hungry lifestyle focused on consumer goods
- ❑ Consumer goods require large amounts of energy for their production, packaging, and transport

Family and Urban Planning: Urgent Imperatives

The pertinent and wise responses to this challenge are

- To resort to family planning
- To resort to urban planning

Contraception: The World Picture

- ❑ At the global level, by the year 2000 57% of all women in the reproductive age group were using some method of contraception
- ❑ The rate of use of contraceptive measures varies
 - 68% in developed countries (as in 2004)
 - 55% in developing countries (as in 2004)

Contraception: Some Relevant Data

- ❑ Female sterilization is the most common method of contraception used in the 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
- ❑ India seriously took up effective Family Planning Program (later renamed as Family Welfare Program) in 1970s in response to its phenomenal population growth
- ❑ Government of India's propagation that a family should not have more than two children has taken several decades to get any remarkable popular acceptance

Family Planning in India: Achievements and Problems

- ❑ India has seriously taken up an effective Family Planning Program.
- ❑ Awareness-building programmes have disseminated the 1/2 child norm, but taken several decades to become effective.

BUT

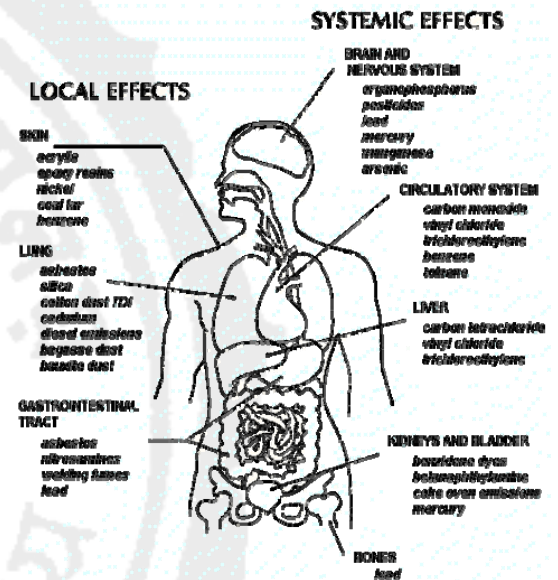
- ❑ In a male-dominated society the contraceptive choice is often determined by the male partner.
- ❑ Among people without adequate education, the choice is not always based on advice of doctors or trained social workers

Environment-friendly Urban Planning: An Urgent Necessity

- ❑ Effect of horizontal spread of the city can be controlled through environment-friendly urban planning
 - rational land-use
 - improvement of slum areas
 - improvement of water supply
 - improvement of drainage systems
 - provision for adequate sanitation
 - effective waste-water treatment system
 - environment-friendly public transport system

Need to Question Urban-centric Development Paradigm

- ❑ To control urban-based environmental degradation
 - Question the patently urban-centric model of development
 - Reduce the current pull that the city exercises on the rural population
 - Devise adequate development options for the agricultural rural sector



7.3

Environment and Human Health

This Section

- Notes how changes in the environment have had an influence on our health
- Questions the assumption that urbanization and industrialization necessarily bring prosperity
- Identifies and describes the diseases that are related to change in the environment
- Discusses the health implications of global climate change and the problems of ensuring environmental health as a result of this change
- Suggests strategies whereby environmental health can be ensured for the human population

Environment and Public Health

- ❑ Public health depends on sufficient amounts of
 - good quality food
 - safe drinking water
 - adequate shelter

- ❑ Global climate change has serious health implications

Environment and Public Health

- ❑ High yielding technologies, Industrialisation and urbanisation lead to inappropriate quality of drinking water, resulting in:
 - waterborne diseases - infective diarrhoea
 - air borne bacterial diseases – tuberculosis

- ❑ High-density city traffic, a consequence of urban overcrowding leads to an increase in respiratory diseases like asthma

- ❑ Agricultural pesticides have affected both the farm worker and the consumers of their produce

- ❑ Bacteria have found ways to resistant strains, and at times the cure is as damaging as the disease itself

Global Climate Change

- ❑ The depletion of ozone in the stratosphere results in diseases such as skin cancer
- ❑ Economic inequality further worsens the situation making poor countries unable to meet emission standards and generally tackle environmental changes

What is Environmental Health?

WHO defines Environmental Health as:

- ❑ physical, chemical, biological, social, and psychosocial - that affect human health, including quality of life
- ❑ also the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that adversely affect the health of present and future generations

Environmental Mismanagement: Water-related Disease

- ❑ There are four major types of water related diseases –
 - water-borne diseases, e.g., gastro-intestinal diseases
 - water-based diseases e.g., amoebiosis and worms
 - water-related vector diseases e.g., malaria
 - water-scarcity diseases e.g., tuberculosis

Environmental Mismanagement: Respiratory Disease

- ❑ Unplanned urban sprawl
- ❑ Environment-insensitive industrialisation
- ❑ Industrial and Motor-vehicle-exhaust fumes

lead to

a high incidence of respiratory diseases
affecting hundreds of millions of people

Strategies towards Environmental Health

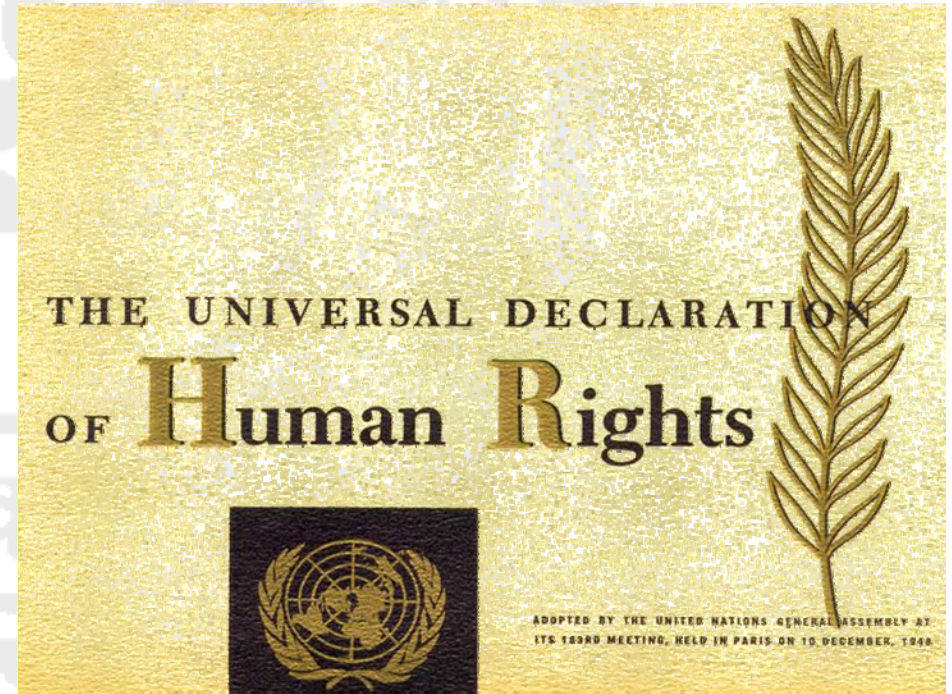
- The people of the world and their governments must evolve strategies to provide clean potable water and nutrition to all
- They must provide clean energy sources to ensure that respiratory diseases are controlled
- They must see to it that the policy of industrialisation takes the environmental consequences of proposed industries into consideration
- They must ensure that transport systems do not emit pollutants that impair health
- They must redirect agricultural techniques away from pesticides and insist on such alternatives as Integrated Pest Management and non-toxic bio-pesticides

Strategies towards Environmental Health

- ❑ They must reorient industrial systems towards those that do not use or release toxic chemicals
- ❑ They must move away from use of those kinds energy that pollute the environment or cause radiation
- ❑ They must seek to control human population to ensure that people sustain the planet by using up less environmental goods
- ❑ They must ensure an equitable sharing of natural resources and environmental goods and services
- ❑ They must make Health Impact Assessment mandatory in the case of all proposed projects of development and industrialisation.



7.4 Human Rights



This section

- ❑ Studies the way in which the notion of human rights has relevance to several environmental issues
- ❑ Notes how there can very well be a human rights framework for sustainable development and environmental justice
- ❑ Locates the correspondence between environmental injustice and human rights violations
- ❑ Notes the strategies for achieving global and local environmental justice so that all people enjoy the right to clean air and water and a safe and sound environment

Overlap of Environmental Issues and Human Rights Issues

- ❑ Both involve the questions of
 - equitable distribution of environmental resources
 - utilisation of environmental resources
 - intellectual property rights (IPR)
 - displacement of people by development projects like dams, mines, power-plants
 - diseases related to environmental degradation

Environmental and Human Rights Abuse

- ❑ Across the globe, many environmental activists, ecosystem people, and indigenous populations face the conjoined problem of environmental and human rights abuse.
- ❑ A growing number of cases that demonstrates the way in which civil, political, and environmental rights are violated conjointly in the less developed countries.
- ❑ These cases suggest the need to frame environmental rights as a significant component of human rights

Equity: The Shared Ground for Environmental and Human Rights

□ Equity demands for all humans:-

- Equal right to environmental resources
- Equal right to environmental information
- Equal right against any inequitable distribution of environmental risks along lines of nationality, race, ethnicity, class, age or gender

Equity Violated: North/South Divide

- ❑ The global South being turned at the behest of the global North into reservoirs of:
 - Toxic waste
 - DDT
 - Hazardous products
 - Garbage

Rights violators: Global and Local Agencies

- ❑ TNCs that wantonly exploit “global commons” to detriment of the local communities and ecosystem people dependent on these commons for livelihood for generations
- ❑ The global trends of economic expansion and globalization that thrive on increased exploitation of natural resources mostly at the expense of the local communities
- ❑ Large development projects like dams, mines Protected Areas and industries that displace local communities from their environment
- ❑ Governments in the developing countries that act in tandem with corporate capital to acquire land and water-bodies for industry and development infrastructure

Environmental Injustice: Violation of Right to Life and Livelihood

- ❑ The rights of the local communities to “global commons” frequently violated in global South
- ❑ The rights of small traditional fishermen to the marine environment, are being violated by mechanised, commercial fishing
- ❑ Inland fishermen’s right to livelihood are threatened by large-scale organised fisheries
- ❑ Rural communities find their rights to even basic resources like land and water threatened by industrial development
- ❑ The right of the tribal user is threatened as the corporate tendency to over-harvest the species out of which corporate firms make herbal products poses a threat to biodiversity

- Indeed various indigenous marginal populations in the developing countries are being robbed of their right to their accustomed livelihood by TNCs and local governments who often act in tandem to acquire for industry the land and water-bodies used by these communities to earn a living.

Intellectual Property Rights of Tribal Communities

- ❑ The denial of the tribal people's right to their own environmental knowledge is a blatant violation of the human rights
 - The tribal people living in forests, have had their own ancient, accumulated knowledge of local plants and animals
 - In recent years pharmaceutical firms are profitably using this knowledge to market commercial products
 - The tribal people are denied:
 - ✓ Their rightful share in the profits earned from such products
 - ✓ Their intellectual property right to their own traditional knowledge even while the pharmaceutical companies often found unethically patent this knowledge in their name

Strategies for Protecting Environmental Human Rights

- ❑ The Responsibility of the State:
 - The state should sincerely activate itself as the guarantor of human rights
 - However, in in most countries of the global South the governments fail to protect the environmental human rights of the poor and the marginal people

- ❑ Why governments fail:
 - in most countries of the global South the governments are directly or indirectly parties to the violation of the environmental human rights
 - The recognition of environmental human rights calls for a fundamental change in favour of a public ethic of equitable distribution of environmental resources. No government is likely to agree to such a fundamental change unless it is pressurised

- ❑ The Responsibility of the People:
 - The people all over the world, particularly in the global South will have to fight for their environmental and human rights

Movements to protect the environmental rights of indigenous peoples are growing worldwide



7.5 Value Education

This Section

- ❑ Explores the ways in which value education can serve the cause of the sustainability of the planet

Value education and its Importance

- ❑ Values are one's own principles and standards - either learnt or autonomously developed - from which we judge what is right and what is wrong
- ❑ The realisation of the urgent need to sustain the Earth can be ultimately generated only through value education
- ❑ Both formal and non-formal education can be used to persuade people to understand environmental values and:

The Spectrum of Environmental Values

- Environmental values include:
 - valuing nature
 - appreciating nature-based cultures
 - respecting the rights of traditional communities in the light of social justice
 - valuing human heritage
 - propagating equitable use of resources
 - sustaining common property resources
 - opposing the global and local destroyers of ecology

Environmental Values: Against Consumerism and Exploitation

□ Environmental values call for

- the rejection of consumerism – the correlate of economic growth that capitalism propagates
- questioning the capitalist notion that the consumption of resources is a major index of development
- rejection of the capitalist attitude that the Earth's environment is a resource only to be utilised and consumed
- valuing nature as a phenomenon to be conserved

Positive Sentiments: Foundation of Environmental Values

- ❑ One of most fundamental positive sentiment on which to found environmental values is valuing Nature itself
- ❑ Another such fundamental positive sentiment is the realization that our lives are an integral but miniscule part of nature's complex web of life
- ❑ A third positive sentiment is to value and respect diverse human cultures. Actually tribal lifestyles that are in fact closer to nature are vanishing because the economically dominant classes do not respect the former

Feeling for Nature: In the Indian Constitution

- ❑ This feeling for Nature is a part of our Constitution, which strongly emphasises this value.
 - Article 48A states, “The state shall endeavour to protect and improve the environment and to safeguard the forests and wildlife in the country.”
 - Article 51A (g) expects that every citizen of the country must “protect and improve the natural environment, including forests, lakes, rivers and wildlife, and to have compassion for all living creatures.”

Generating Awareness

□ We need to generate the awareness

- that one of the greatest causes of anthropogenic environmental degradation is imperviousness to the consequences of unlimited and unrestrained anti-environmental behaviour
- about appropriate behaviour in relation to the longevity of our surroundings and of other species on Earth
- in each individual about environmental consequences in his/her action

Early Socialisation and Awareness-Generation

- ❑ Environmental awareness can be best generated
 - through educational processes initiated right from the stage of early socialisation of the child
 - by providing environment-sensitive answers to a children's questions about their surroundings



THANK YOU