7.3

Environment and Human Health

This section notes how changes in the environment have had an influence on our health. It questions the assumption that urbanization and industrialization and modern agricultural technologies necessarily bring prosperity; on the flip side, urbanisation and industrialisation lead to diseases. This section identifies and describes the diseases that are related to change in the environment. It also discusses the health implications of global climate change and the problems of ensuring environmental health amidst this change. It also suggests strategies whereby environmental health can be ensured for the human population.

Our environment affects health in a variety of ways. Public health depends on sufficient amounts of good quality food, safe drinking water, and adequate shelter. Industrialisation, urbanisation and the so-called green revolution change the environment for the worse in most cases and thus affect human health. Global climate change has serious health implications.

Industrialisation and urbanisation lead to overcrowding and a decline in the quality and quantity of available water. This decline causes an increase in waterborne diseases like infective diarrhoea and water-scarcity diseases like tuberculosis. High-density city traffic, a consequence of urban overcrowding, leads to heavy pollution that causes an increase in respiratory diseases like asthma. Agricultural pesticides aimed at enhancing agricultural yield and popularised as an aspect of the 'green revolution' have adversely affected both the farm worker and the consumers because of the high degree of hazardous chemicals in them. Modern medicine is unequal to the task of solving these environmental impacts on health. It is true that modern medicine has tried to solve many health problems, especially those of infectious diseases, through antibiotics. But bacteria, too, have developed drug-resistant strains, making it necessary for druggists to keep on creating newer antibiotics; and at times the cure is becoming as damaging as the disease itself.

Global climate change has serious health implications. Many countries will have to adapt to uncertain climatic conditions due to global warming. With the climate changing in unprecedented ways, we may no longer know what to expect. There are increasing storms in some countries, increasing droughts in others, while the temperature is rising throughout the world. The El Niño winds affect weather worldwide. The El Niño event of 1997/98 had serious impacts on health and well-being of millions of people in many countries. It created serious drought, floods, and triggered off epidemics. The depletion of ozone in the stratosphere (middle atmosphere) also has an important impact on global

climate and, in turn, on human health, increasing the amount of harmful ultraviolet radiation that reaches the Earth's surface. This results in such diseases as skin cancer. Economic inequality further worsens the situation. Poor countries are financially unable to meet required emission standards and to generally tackle environmental changes, with the result that they suffer more in terms of health. Basic environmental needs such as clean water, clean air and adequate nutrition which are all related to environmental goods and services do not reach over 1000 million people living in abject poverty.

Environmental health, as defined by the WHO (World Health Organization), comprises those aspects in the environment - physical, chemical, biological, social, and psychosocial - that affect human health. It also refers to the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that adversely affect the health of the present and the future generations. This notion of environmental health sensitises us to the unacceptability of development strategies which do not incorporate ecological safeguards and, thus, promote ill-health.

Let us see the link between inadequate environmental management, on the on hand, and ill-health, on the other.

Inadequate environmental management can lead to various water-related diseases, even in the form of epidemics. There are four major types of water-related diseases – a) water-borne diseases caused by dirty water in urban sewage, contaminated by human and animal wastes, or by water polluted by chemical wastes from industry and agriculture; b) water-based diseases caused by aquatic organisms that live a part of their life cycle in water and another part as a parasite in humans; c) water-related vector diseases that spread through stinging insects breeding in stagnant water; d) water-scarcity diseases which spread mainly through unwashed hands.

a) Wastewater and/or sewage entering water sources without being treated or the inadequate purification of water meant for drinking leads to gastrointestinal diseases in the community and even to epidemics. Millions of children die every year due to diarrhoea from contaminated water. An estimated 2000 million people are affected by these diseases and more than 3 million children die each year from waterborne diseases across the world. b) Using poor quality water for cooking food leads to parasitic infections, such as amoebiosis and worms. Millions of people, mainly children, suffer from such infections It is estimated that in India every fifth child under the age of 5 dies due to diarrhoea. c) An inadequate environmental management of stagnant water is the most important factor in the spread of malaria, as stagnant water forms the breeding sites of anopheles mosquitoes. Large numbers of people in tropical countries die of malaria every year and millions are infected. The resurgence of malaria in India is leading to cerebral malaria that affects the brain and has a high mortality. d) Infectious diseases like tuberculosis spread largely though the medium of unwashed and inadequately unwashed hands, a consequence of water scarcity, caused by lack of environmental planning. Tuberculosis (TB) kills approximately 2 million people every year. In India the disease has reappeared in a form that is more difficult to treat than the previous versions. Indeed, a global epidemic of TB is spreading and becoming more multi-drug-resistant and lethal.

Unplanned urban sprawl and environment-insensitive industrialisation lead to a high incidence of respiratory diseases. Hundreds of millions of people suffer serious respiratory diseases, including lung cancer and tuberculosis that are evidently fostered by crowded houses and congested public places. Motor vehicle exhaust fumes, industrial fumes and tobacco smoke, too, contribute to respiratory diseases.

Mindless industrialisation, unscrupulous marketing of products containing hazardous chemicals and agricultural products containing high traces of chemical pesticides, do not conform to environmental standards and expose millions of people to hazardous chemical intake/inhalation in their workplace or homes. These chemicals lead to ailments of various kinds.

Now let us suggest the ways in which the world can address people's health care needs even while ensuring the sustainable use of natural resources.

- The people of the world and their governments must evolve strategies to provide clean, potable water and nutrition to all these items indispensable for a healthy living environment.
- They must provide clean energy sources to ensure that respiratory diseases are brought under control.
- They must see to it that the industrial policy 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, herbicides and insecticides which are injurious to the health of farmers and consumers by using such alternatives as Integrated Pest Management and non-toxic bio-pesticides.
- They must reorient industrial systems towards those that do not use or release toxic chemicals that affect the health of workers and people living in the vicinity of the industries.
- They must move away from use of those kinds energy that pollute the environment or cause radiation. This involves moving away from thermal power and nuclear power towards cleaner and safer sources such as solar, wind and ocean power that do not affect human health.
- They must seek to control human population to ensure that people sustain the planet by using up less environmental goods and services; unsustainable use of resources by an ever growing population leads to unhealthy lives and health hazards.
- They must ensure an equitable sharing of natural resources and environmental goods and services, as poverty and lack of access to natural resources is a cause of ill-health.
- They must make **Health Impact Assessment** mandatory in the case of all proposed projects of development and industrialisation. WHO defines **Health Impact Assessment** as a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.