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ENVIRONMENT, HEALTH AND SANITATION

In the previous lesson, you have learnt about the concept, significance and global pattern of human development and Sustainable Development Goals (SDGs). As you know, there is a close relation between the environment and human development. For example, we have constructed dams for electricity generation, irrigation and to fulfil other purposes but it leads to deforestation and loss of biodiversity. Similarly, industrialization and urbanisation accelerated various types of pollution along with loss of fertile agricultural land which eventually created ecological imbalance on our planet. However, the quality of air, water and land is deteriorating day by day which is impacting human health. In this lesson, you will learn the link between environment, sanitation and health along with the issues, challenges, health risks possessed by them, government initiatives and different types of traditional medicines and health practices. Therefore, in order to understand health, it is very important to get familiar with our environment.



OUTCOMES

After studying this lesson, learner:

- identifies the linkages between the environment, health and sanitation;
- describes environmental management to minimise the health risks;
- explains the overview of government initiatives like Namami Gange, Ujjwala Scheme and Swachh Bharat Abhiyan, and
- elaborates the traditional medicines and health practices for common health issues.

25.1 CONCEPT OF ENVIRONMENT, HEALTH AND SANITATION

The terms environment, health and sanitation seem very simple but they are very complicated to understand as all of them are interrelated to each other. There is a direct relation between environment, health and sanitation. In other words, Sanitation stimulates health and improves

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the quality of environment. For instance, according to SwachhSarvakshen 2021, Indore is the cleanest city of India which signifies that it maintains hygiene and sanitation and residents of the city fall comparatively less sick and enjoy good health. Now let's understand all the terms in details.

A. Environment

Environment simply means our surroundings. The conditions in which we live, recreate and work is called the environment. There are two types of environment namely physical and human. The physical environment includes air, water, sunlight, land and its attributes like plants, animals etc. On the other hand, the human environment consists of man-made features created and modified by humans such as buildings, dams, roads etc.

Components of Environment

Environment is a composite form of biotic and non-living or abiotic organism within which human beings live and work. It includes natural as well as social, cultural and economic environments. Thus, the environment contains a complex relationship between various living organisms and many external forces which affects lives of organism. Human being totally depends on the environment as it provides all types of resources that are required for their survival.

Factors of the environment have been divided into following components. All of them are closely related, directly or indirectly, to a healthy man and his environment.

- **Physical** - climate, air, water land use land cover, altitude
- **Biological** - Bacteria, viruses, insects, rodents, animals, population size, sex-age structure.
- **Economic**- Occupation, , average wages, inequality, poverty, sectoral makeup of urban economy
- **Social**- Customs, culture, habits, availability of medical establishment and relative size of medical personnel.

B. Health

As you all must have heard a proverb since your childhood that "health is real wealth". When we say we are healthy, it means "Health is something special.

Health is very dynamic by nature and varies from person to person and from region to region. It is an equilibrium between man and his environment. Health is a level of functional condition of a person's mind and body. Generally, health means to be free from illness, injury or pain. Well known definition given by the World Health Organization (WHO) in 1948 has defined health as "a state of complete physical, mental and social well-

being and not merely the absence of diseases or infirmity". Do you know about World Health day? And when it is celebrated? It is celebrated on 7th April which is World Health Day.

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As per WHO three specific dimensions of health are:

1. **The physical** - perfect functioning of the body
2. **The mental** - a state of balance between the individual and the surrounding world.
3. **The social** - quantity and quality of an individual's interpersonal ties and the extent of involvement with the community.

In simple words, health is the absence of illness or disease and the presence of mental, social and physical wellbeing. As per ancient view health implies sound mind, in a sound body in a sound family in a sound environment.

Many health related issues and diseases have their origin in the above environment. Diseases have source area (core), spread (diffuses) through humans along identifiable rates and affect clusters of population (region).

Improving the quality of the environment in key areas such as air, water and noise can prevent many diseases and improve human health.

Health is a complex system of interaction among the environment, human population and cultural behaviour. Sound health is essential to lead a "socially and economically productive life". It is also associated with many other things.

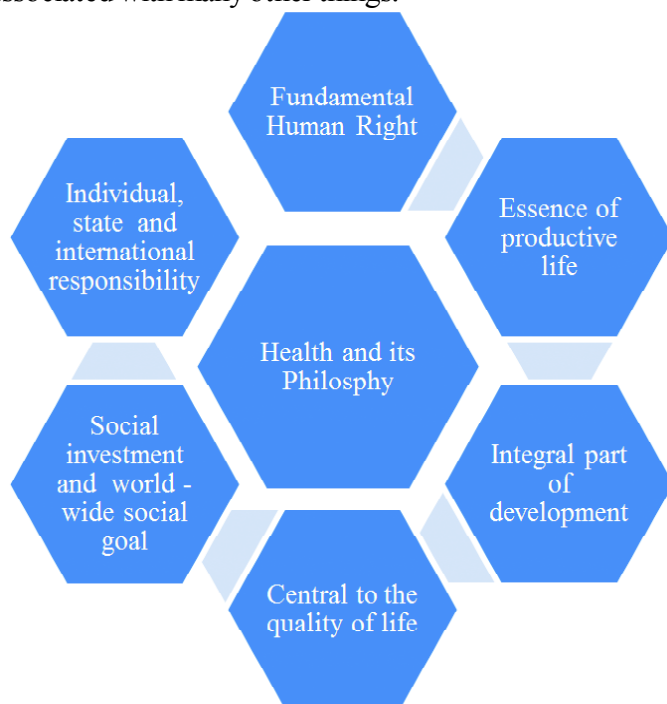


Fig: 25.1 Philosophy of health

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From an ecological point of view, diseases are defined as "maladjustment of the human organism to the environment".

Human health is a combination of many factors like nutritional, biological, chemical and psychological. In all factors, the environment has a direct impact and consequences on human health. The types and frequency of various diseases very much depend on environmental conditions. Diseases can be classified in two broad categories: Infectious (communicable) diseases and Life-Style (chronic non- communicable) diseases.

Disease is a product of interaction among the agent, host and environment. The agent and the host mutually interact and both can currently interact with the complex matrix called the environment which is both physical and cultural. The triangle is showing the interaction and interdependence of agent. Example is communicable disease. In this, agent is the cause of disease; the host is an organism, commonly a human or an animal that cause or allow disease transmission: and time account for incubation period, life expectancy of the host or the pathogen and duration of the course of illness of condition.

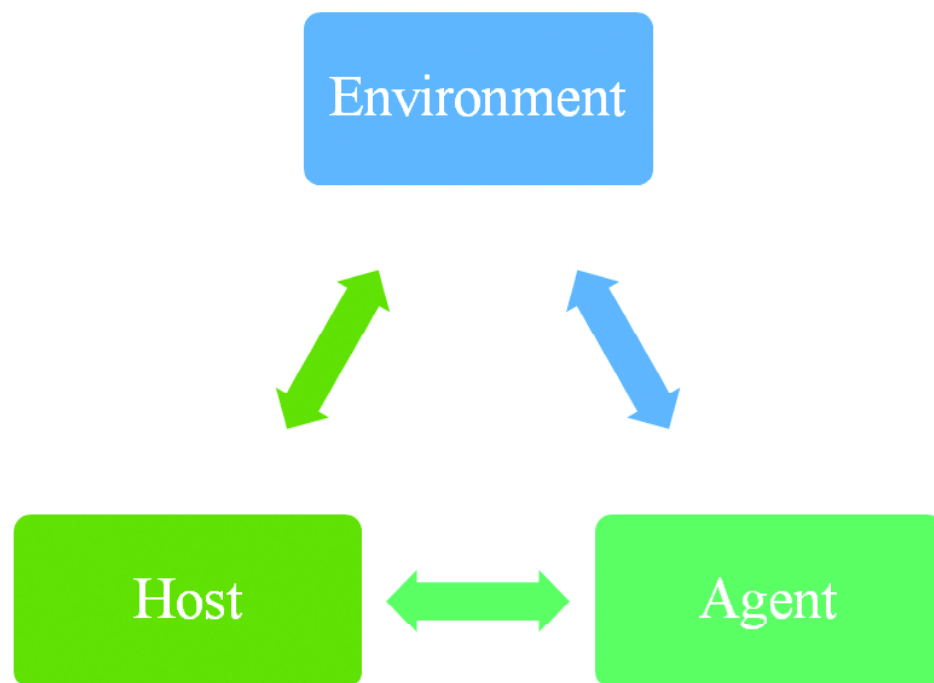


FIG: 25.2 Trilogy of Disease

Health is an inseparable part of the developmental process. Man's poor health can be traced to environmental factors such as pollution, housing conditions, presence of animal and insect vectors or disease which pose a constant threat to man's health. Therefore we can say, Health is linked with environmental conditions.



Health is a real wealth, in order to maintain good health it is the first priority of any human being. Environmental determinants such as air pollution, climate change, contamination with hazardous chemicals, uncontrolled waste generation and disposal. Public health issues like morbidity and mortality both have increased due to increase in pollution level.

Health is determined by following factors such as :

- a. Exposure to outer environment
- b. Climatic conditions
- c. Sanitation condition
- d. Living condition
- e. Land use/cover
- f. Eating habits/ food habits
- g. Occupation
- h. Daily routine/ life style

To maintain good health, we need to address adequate sanitation, together with safe water. It is a fundamental need for good health and for social and economic development.

C. Sanitation

Sanitation means the prevention of human contact with waste for hygiene purposes. It also means promoting health through the prevention of human contact with the hazards associated with the lack of healthy food, clean water and healthy housing and clean environment.

As per the dictionary meaning of the word Sanitation is the "the science of safe- guarding health".

According to the National Sanitation Foundation of the USA "Sanitation is a way of life."

The term "Environmental Sanitation" has been defined by WHO as "the control of all those factors in man's physical environment which exercise or may exercise a deleterious effect on his physical development, health and survival "

Sanitation covers almost controlling the environment with a view to prevent diseases and promote health. It's about quality of living that is expressed in the clean home, clean family, clean neighbourhood and the clean community. Currently, environmental sanitation is the most important health issue. Environmental health is broader than hygiene. It encompasses hygiene, sanitation and many other aspects of the environment. Hygiene generally refers to the set of

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practices associated with the preservation of health like personal hygiene, household cleanliness, and community cleanliness. The focus is mainly on personal hygiene, diet looks at cleanliness of hair, body, clothing and menstrual hygiene. Environmental health addresses all the physical, chemical and biological factors that are connected to disease transmission.

It focuses on management of wastes produced by human activities. We can break the vicious cycle of diseases by achieving environmental sanitation. Generally, principles of sanitation apply to both urban and rural problems.

There are different types of sanitation relating to particular situation such as given in figure

- Basic sanitation refers to the management of human faeces at the household level. It means access to a toilet; onsite sanitation; the collection and treatment of waste at the place where it is deposited.
- Food sanitation refers to the hygienic measures for ensuring food supply.
- Environmental Sanitation is about the control of environmental factors that form links in disease transmission. It includes solid waste management, water and wastewater treatment, industrial waste treatment, noise and pollution control.
- Ecological sanitation based on the concept of recycling the nutrients from human and animal wastes to the environment.

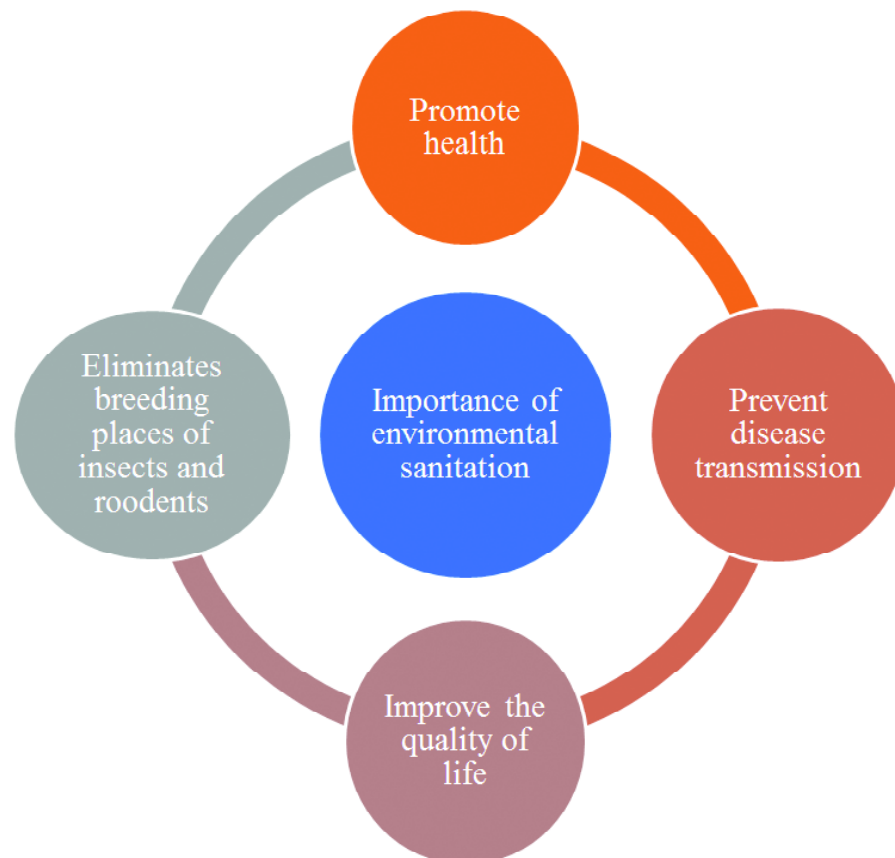


Fig. 25.3: Sanitation and its importance



Sanitation refers to public health conditions like clean drinking water and adequate treatment and disposal of human excreta and sewage. The aim of sanitation systems is to protect human health by providing a clean environment that will stop the transmission of disease, especially through the faecal - oral route. For example diarrhoea, a main cause of malnutrition and stunted growth in children can be reduced through sanitation. Therefore, adequate sanitation means good hygiene and safe water. This is also fundamental to good health and to social and economic development. By improving sanitation, we can improve quality of life and can prevent various diseases. That is the way by which the mortality rate will be reduced particularly in developing countries.

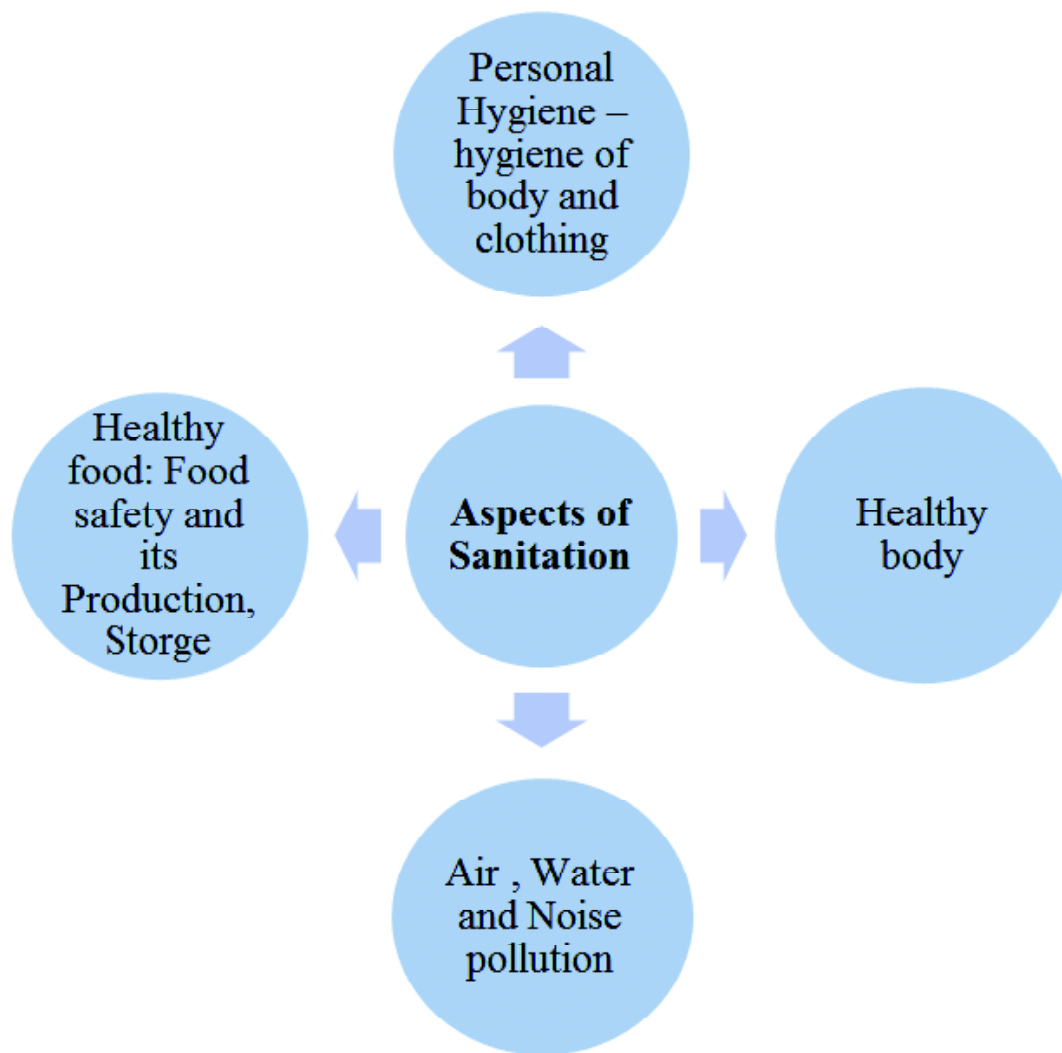


Fig. 25.4: Aspect of Sanitation

For example, preventing human contact through face masks is part of sanitation. Cleaning hands before eating, taking bath every day, and proper hand washing have to follow the basic hygiene and sanitation in our daily life.

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INTEXT QUESTIONS 25.1

1. Fill in the blanks
 - i.Is the level of functional condition of a person's mind and body?
 - ii. World Health Day is celebrated on
 - iii. is a product of interaction among the agent, host and environment.
 - iv. refers to the set of practices associated with the preservation of health like personal hygiene, household cleanliness, and community cleanliness.
 - v. Human Health is intimately linked to the state of the

25.2 LINKAGES BETWEEN ENVIRONMENT, HEALTH AND SANITATION

You know that, if we live in better environmental conditions we will have higher life expectancy than those who live in a polluted environment.

Both Environment and human health are inseparable. So, the environment should be kept clean and healthy to keep us healthy. After the industrial revolution, the world population transferred from rural areas to urban areas. It brought a huge problem which threatened our environment. This is mainly due to industrial activities along with rapid growth of population. Large population is responsible for lower quality of life, growth of slums and other associated problems like poverty and inequality, technical and scientific development while industrial activity produces industrial waste.

Industrial waste produces three kinds of waste; solid, liquid and gas. Industrial waste pollutes the nearby soil or adjacent water bodies and can contaminate groundwater, lakes, streams, rivers or coastal waters. Industrial waste is often mixed with municipal waste, making accurate assessment difficult.

Industrial waste includes trash, oils, solvents, dust gravel, many harmful gases etc. These are dumped in seas or land without adequate treatment, thus becoming a source of pollution. In areas of poverty (malnutrition), inadequate medical services, poor sanitation, and substandard housing prevail. It is difficult to identify the specific effects of malnutrition on people's susceptibility to disease because so many other factors are present. Direct damage has to health and health determining sectors such as agriculture, water and sanitation. Climate change is the single biggest health threat facing humanity. Health professionals worldwide are already responding to the health harms caused by this unfolding crisis.

Human Health is intimately linked to the state of the environment. Good quality natural

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environments provide basic needs, in terms of clean air and water, fertile land for material inputs and food production and energy, and forests also serve to regulate climate. At the same time the environment represents an important pathway for human exposure to polluted air, noise and hazards, chemicals etc. Healthy people are those who live in a healthy house on a healthy diet of quality environment.

Since last century environmental degradation has increased as the human population has been increasing. Many indicators of growth and development like agricultural progress, rapid growth of urbanisation, and industrialization. The relationship between the health of the human population and the state of development of a society is complex and varies over time. Good health is a result from complex interaction between man and agent and the environment. If you are living on a busy main road, very close to a source of electromagnetic radiation or near a site of disposing of hazardous waste, you may be more at risk of illness than others who do not live. For example, many areas of Bihar, west Bengal are prone to health hazards due to the consequences of consuming Uranium, Arsenic, Fluoride and Iron through water and vegetables and food grains.

Let us discuss, elements of environmental health which focus on following

1. Global Environmental Health
2. Outdoor Air Quality
3. Surface and groundwater
4. Toxic substances and Hazardous wastes
5. Home and Communities
6. Infrastructure and Surveillance

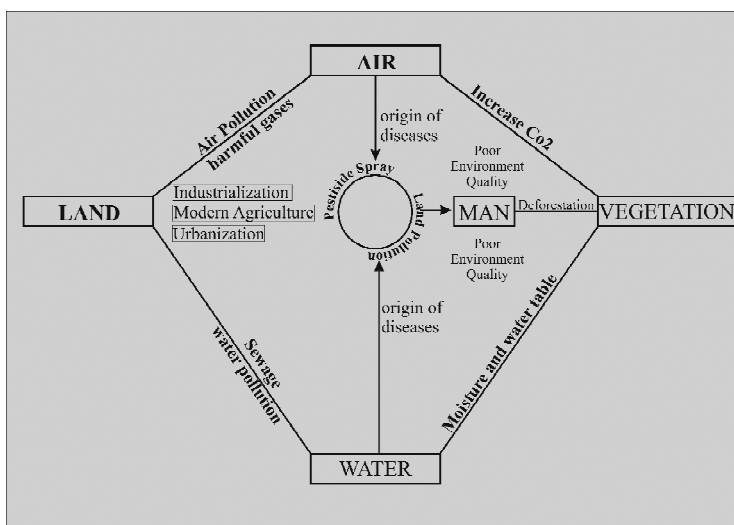


Fig. 25.5: Linkages between Environment health and sanitation

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There are following important driving forces which are interlinked in environment health and sanitation processes.

A. Modern Agriculture

Agriculture is a primary activity and the base of any country's development. This is fully based on our environment. All other types of economic activity are directly or indirectly related to agricultural activities. It is a main source of food and nutrition for human beings. Development in this sector has positive as well as negative impact on human health. Health can be a result of under nutrition as well as over nutrition. The excess use of fertilisers or pesticides for higher production has been linked to the elevated incidence of human diseases such as cancer, asthma, obesity, respiratory disease and organ system failure and the risk of groundwater problems in the human population. Pesticides like DDT, DDE, TDE etc. have their impact on all three components of earth i.e. lithosphere, hydrosphere and atmosphere. Pesticides can even enter the body through skin, lungs and digestive tract. Many Diseases can be seen like nausea, vomiting, abdominal cramps, diarrhoea and gastro-intestinal poisoning.

B. Industrialisation

industrialisation means increasing the establishment of industries which in turn has an impact on the environment. Forests are cleared to make way for new industries and cutting of trees causes many harmful impacts on human health and environment. With an expansion in human population more food, materials and shelter are being manufactured at stupendous rates, mostly stemming from forestry. Trees are very important for humans and the environment because they release oxygen and make the environment clean. Industries are continuously polluting indispensable resources like air, water and soil which require millions of years to replenish. In other words, due to industrialisation pollution increasing in rivers and water bodies and in air smoke release everywhere. These pollution and cutting trees affects the environment and causes harmful effects on human health. It also causes diseases like asthma because without trees humans face problems in breathing.

C. Urbanisation

Urbanisation led to migration from rural to urban areas leading to overpopulation and overcrowding thus resulting in poor health practices due to congestion and development of slums.

D. Air pollution

Air pollution is a major threat to human health. The combustion of fossil fuels is the problematic and principal source of air pollution in the urban and industrial areas. Beside

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its health impacts, air pollution also poses a threat to the region's food security, water security and climate system. Air pollution such as ozone and sulphur oxides cause crop and ecosystem damage and pose a major concern for food security. Black carbon, a component of particulate matter, has been identified as a major contributing factor in the accelerated melting of snowpack and glaciers.

Polluted environment causes various types of diseases, for example infectious diseases are caused by internal dysfunctions such as autoimmune diseases. In a broader sense, disease is a condition that causes pain, dysfunction, distress, social problems or death to the person.

E. Climate Change

Global climatic change is an important issue that concerns mankind. You all know that the "Greenhouse effect" is due to anthropogenic activities which have destroyed the protecting layer of earth's temperature. Global warming is maintaining harmful effect on human health, animal, forest, wildlife, agriculture and water environment. It also adds health risk to poor people. Climate change affects elements of healthy environment as clean air, safe drinking water, sufficient food and secure shelter. Due to it's expected to cause additional deaths per years from malnutrition, malaria, diarrhoea and heat stress.

Climate change puts at risk the food supplies of people in developing and developed nations like flood, drought, more intense hurricanes, heat waves and wildfires can drive down crop yields, destroy livestock and interfere with transport of the food. Rising carbon dioxide levels from human activity can make staple crops nutritious like rice or wheat.

In most of the places where food is grown today, crop yields are likely to be lower because of more frequent heat waves, worse air pollution, floods and droughts. All essential nutrients for people's health represent major risks to people's health in developing nations where deficiencies in zinc, iron and protein lead to major burdens of disease. The diseases range from maternal mortality around child birth to problems with brain development in children.

Climate change influences human health and disease in numerous ways and may vary with location, time and economic base.

Table 25.1: Major pollutants/ contaminant/ wastes, sources and impact on health

Pollutant	Sources	Impact on health
Carbon monoxide	Automobiles due to incomplete combustion	Displaces oxygen in blood, reduces the amount of oxygen to blood tissues, extra burden on anaemic, heart and lung patients.

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Particulates (Smoke, Fly, Ash etc.)	Stationary fuel combustion in industrial process	Occurrence of photo-chemical smog
Oxides of sulphur	Burning of coal and oil as fuel in industrial processes	Harmful for the respiratory system, irritates the upper respiratory tract and lung tissue.
Hydrocarbon	Automobiles, fuel combustion in electric power plants, combustion of solid waste disposal etc.	Help with farming photos - chemical smog.
Oxides of nitrogen	Burning of fuel at very high temperatures as in transport vehicles, power plants and industrial boilers.	Nitrogen oxides combine with hydrocarbons in the presence of ultraviolet rays of the sun to form secondary pollutants called photo- chemical oxidants.
Degradable wastes	Domestic and municipal sewage and other oxygen demanding industrial wastes	Depletion of dissolved oxygen in water , harmful for fish and other aquatic life.
Infectious agents	Polluted, stagnant water breeding grounds for parasites, bacteria, viruses of all kinds.	Cause water-borne diseases and outbreak of epidemics such as amoebiasis , dysentery, cholera, typhoid etc.
Synthetic organic compounds	Such as pesticides, agricultural chemicals, detergents, industrial wastes , DDT etc.	Instance of cadmium, lead and mercury poisoning in human beings. cause neurological impairment and even deaths
Inorganic minerals	other chemicals . Asbestos and acids etc.	Asbestos produces lung cancer. Acids cause allergies, ulcers, skin diseases. Also have a catastrophic impact on fish and aquatic life.
Radioactive elements	Wastes from nuclear power plant and	Potentially hazardous in the event of leakages and induce radiation related illness
Sediments	Soil and mineral particles	Reduce amount of sunlight



	washed into streams or water	available for marine plants cause clogging of filter plants
Thermal pollution	Water used for cooling in electric, thermal, nuclear power plants, when recirculate in water bodies	Can raise lake water temperature by 70-100 c aggravate diminution of dissolved oxygen, kills marine fish and plants life.

Other effects on health like temperature related illness, Extreme weather related effects, effects of food and water shortage, effects of noise pollution etc. Human health and its safety is also affected due to the unsafe environment at home, school and workplace as we spend most of our time in these places and may be exposed to conditions of indoor air quality, inadequate heating and sanitation, structural problems, electrical and power hazards and lead based paint hazards. Environment and health are closely associated with each other. Day by day, due to declining quality of environmental elements and their pollution level, health conditions are becoming worse. Along with this, many other issues like the threat of climate change, poverty, hunger and inequality are challenges for health, sanitation and environment for human survival. Without sound health, there is no meaning to life.



INTEXT QUESTIONS 25.2

1. Write T against the correct statement and F against the incorrect statement
 - i. Without sound health, there is no meaning to life.
 - ii. Pesticides do not have any impact on the components of earth.
 - iii. Air pollution is not a major threat to human health.
 - iv. Global warming is maintaining harmful effect on human health, animal, forest, wildlife,

25.3 GOVERNMENT INITIATIVES FOR SANITATION PROGRAMME

We know about these diseases which are a result of the polluted environment due to many anthropogenic activities. Sanitation and environmental quality are necessary requirements for human health. Passing a clean environment to the next generation is a critical aspect for each successive generation. Without safeguarding our environment, we can't keep our environment healthy. That's why our government, with the collective wisdom of all stakeholders, is thinking in terms of sustainable development and environmental management for the future generations.

All of us have a right to live in a quality environment. Environmental protection has become a global motive for all our development and planning. This can be achieved by environmental

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management programmes, through various ways:

- Decreasing air pollution is an important step in order to create a pollution free healthy environment.
- Protecting water resources by minimising exposure to contamination are an important part of environmental health.
- Reducing exposure to toxic substances and hazardous wastes are a fundamental requirement for environmental health.
- Maintaining healthy homes and communities and free from hazards and unsafe conditions is essential for the safety of our health.
- Others such as to protect biodiversity, educate people to all levels; encourage research for formulating plans, policy and guidelines for the improvement of the quality of the environment.

The Indian government has started various programmes and initiatives towards sanitation, cleaning of rivers, poverty eradication and health facilities. In the present scenario we are over using the national resources and polluting our environment but to keep our environment clean and healthy government initiatives have played a huge role in helping out solutions to the problems.

"Sanitation is a cornerstone of public health" Dr.Margarreet Chan, Director- General, WHO

"Improved sanitation contributes enormously too human health and Well-being, especially for girls and women"

In this regard the following important initiative is going to be discussed.

A. Namami Gange Programme

The NamamiGangeYojana was a part of flagship programme initiated by the central government as an integrated conservation mission in 2014. The objectives of initiatives are conservation, rejuvenation, and effective reductions of pollution to clean the River Ganga. The total pollution level of river Ganga is contributed both ways i.e. domestic and industrial waste water and the non- point resources are agricultural sewerage, solid waste dumping left over religious material etc. The domestic sewage contributes 70 percent of the pollution load whereas industrial waste contributes to 30 percent of the all pollution loads. Under this programme emphasis has been given on pollution elimination, sewerage treatment infrastructure, river surface cleaning, afforestation, industrial effluents monitoring, biodiversity, and river-front developments, development of efficient irrigation methods and rational agricultural practices and public awareness. As per an estimate

everyday 500 million liter's wastewater from industrial services are directly dumped into rivers in many places. This programme is divided in entry-level, medium level and long term activities to be implemented within ten years. The Ministry of Drinking Water and Sanitation identified 1674 Gram Panchayats situated on the banks of the River Ganga in 5 States to construct toilets. A consortium of 7 IITs is engaged to prepare the Ganga river basin plan, and 13 IITs adopted 65 villages for developing them as model villages.

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B. Swachh Bharat Abhiyan

Swachh Bharat Abhiyan (SBA) is a country wide campaign initiated by the Government of India on 2nd October 2014. This mission was started with an aim to eliminate open defecation and open defecation free country in five years and construction of individual cluster community toilets. As we know open detection was one of the major causes of death of thousands of children's every year. The aim of this mission was changing people's attitudes, mind-sets and behaviours towards villages to be kept clean. It also encourages cost effective and appropriate technology for ecologically safe and sustainable sanitation facilities through awareness creation and health education.

Have you thought, Why SBA? Why on Gandhi Jayanti because Ghandhiji had rightly said (1923) "sanitation is more important than independence" he was aware of the pathetic situation of rural India and emphasised on cleanliness sanitation. Through this mission it was about bringing an improvement in the general quality of life in the rural areas. The main focus of the mission is on solid and liquid waste management for overall cleanliness of the rural areas. The mission aims to cover around 1.04 crore households, provide 2.5 lakh community toilets, 2.6 lakh public toilets and a solid waste management facility in each town. Under the programme, community toilets will be built in residential areas where it is difficult to construct individual household toilets.

The SBA campaign proved to be a great success. Within four years of the campaign the number of people detected in the open dropped considerably from 550 million to around 150 million. This abhiyan also includes operations like door to door waste collection and their proper disposal. In 1990 deaths due to water and sanitation consisted of 13 percent of the total death across the country. By 2016 the percentages had come down to 5 percentages; which is quite significant.

C. Ujjwala Yojana

The Ujjwala Yojana scheme is a big and path-breaking initiative regarding the health and sanitation of local women and the nation as a whole. It was started in 2016 by the Ministry of Petroleum and Gas, central government for transforming the lives of the poorest of the poor. The scheme PMUY (Pradhan Mantri Ujjwala Yojana) aims to

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provide clean fuel to women and address health hazards due to use of wood, cow dung, free from drudgery of collecting firewood, smoke free house to all etc. in cooking. There was a target to achieve 8 crore households for LPG connection by 2020 and to be covered by 58% population by 2030. It is a greater push towards use of cleaner fuel because there are serious health hazards associated with the burning of fossil fuels. As per an estimate of WHO, 5 lakh people died in India due to the use of unclean cooking fuels. The smoke inhaled by women using nuclear fuel is equal to smoking lots of cigarettes in an hour. By which the air pollution causes respiratory disease or disorders like lung cancer, heart disease, stroke and chronic and obstructive pulmonary diseases

Some diseases are reduced through implementation of this Scheme. In the nation as whole and particularly local rural women are benefiting due to air pollution, clean environment and healthy society.



INTEXT QUESTIONS 25.3

Multiple Choice Questions

- Namami Gange Programme was initiated in -
 - 2012
 - 2013
 - 2014
 - 2015
- Swatchh Bharat Abhiyan was celebrated on -
 - Buddha Jayanti
 - Gandhi Jayanti
 - Mahavir Jayanti
 - Ambedkar Jayanti
- Ujjwala Yojana is an initiative for -
 - Children
 - Men
 - Women
 - none

25.4 TRADITIONAL HEALTH CARE SYSTEM AND MEDICINAL PLANT

The concept of health has evolved over the centuries. Health care system is one of the important aspects of health. Worldwide, there are two types of medical health care systems: one traditional and the other modern. To provide all modern health care facilities to the citizens of a country is difficult especially for a developing country like India. Therefore, we have to use and focus on our traditional health care system. A number of traditional systems have existed and flourished across the world. The Indian traditional system is also known as the natural health



care system, for example Ayurveda, Naturopathy and yoga. Natural health care system is based on the philosophy of "nature is the best healer".

This system is fast disappearing due to relatively low income, lack of written documents, deaths of the knowledge bearers, lack of government strategy to protect their knowledge, among the present generation and overall impulsive attitude towards traditional healing systems.

The UN SDG 3 focuses on good health. The need of the hour is to develop medicines combining modern medicines, yoga and traditional medicines for sustainable health.

Medicinal plant - we have to learn about medicinal plant uses and their important role in the primary health care system. In the urban areas need to aware of rich knowledge that exists in our traditional health care systems of medicine regarding usage of various plants species for our health care needs.

Many plant species used for medicinal purposes are also used in the field like aromatherapy, fragrance, essential oil, food supplement, herbal tea, cooling purpose, healing powers, and cosmetics purpose etc.

Medicinal plants today are seen only as a source of affordable health care in developing nations but also in the developed world. About 80 percent of the developing countries population uses indigenous medicines based upon plants. Most of the world population believes that local medicine systems based on plants have no side effects. India has strong traditions as a plant based system of medicine like Ayurveda and Siddha which are 3000-5000 years old.

Medicinal plant sector is highly unorganised where traditional healing is often seen as an unrecognised occupation. The large number of healers belong to the poor and aged group. Many medicinal plants have significantly contributed to the maintenance of the health and fitness of masses since ancient times and remain to do so in most of the developing countries even today.

Some examples are mentioned in the following table:

Table.25.2. Information of important Medicinal plants and its health benefits

Plant Name	Used Part	Health benefits
Ashwagandha	Roots	Reduce stress and tension, control depression, useful in general weakness and gives vitality.
Amla	Fruit	Rich source of vitamin C, useful indigestion and Jaundice, it cures insomnia and is healthy for hair, it is used as Cardio protective
Arjun	Bark	Mainly used in heart disease and it helps strengthen

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		the body's natural rejuvenate processes, hastening the replacement of dead or weak cells with fresh, vital ones. the bones,
Ashok	Bark, Seeds and flowers	Bark used in biliousness, dyspepsia, fever, ulcer, dysentery, colic, piles and pimples. Dried flowers used in diabetes and hemorrhagic dysentery, seed used for treatment of bone fractures.
Brahmi	Whole plant	It is an excellent brain tonic, useful for nerves and used in mental diseases, used to improve intellect, treatment of asthma, hoarseness, insanity and epilepsy.
Bahera	Fruit and Bark	Fruit is useful in stomach disorders such as indigestion, diarrhoea. It is useful in asthma, bronchitis, inflammation, sore throat, and treatment of eyes, nose, heart and bladder diseases.
Bael	Fruit, leaves and root	It is a tonic, antibiotic and appetiser, used in the treatment of constipation. Fruit juice is beneficial during summer.
Bach	Rhizomes	It is valued as a rejuvenator for the brain and nervous system and as a remedy for digestive disorders. SUseful in stomach aches and kidney stones.
Gwarpatha	leaves	Leaf pulp used in liver and spleen ailments and for eye troubles, also used in colic and constipation, skin disorders, burns , anti - ageing creams and cuts.
Jamun	Seed and Bark	It is traditional medicine for diabetes and sore throat, seed powder and juice is used for diabetes, Bark used in dysentery and leucorrhea.
Kadipatta	Whole plant, leaves and root bark	Diarrhoea, dysentery, piles, leukoderma, blood disorders.
Shatavari	roots	Used as a general tonic,, useful in nervous disorders, tumours, throat infections, cough, bronchitis and general debility.

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Sarpagandha	roots	Root is used as a sedative and for reducing blood pressure, also for relief from nervous disorders including anxiety, insanity, insomnia and epilepsy.
Sadabahar		Leaves, flowers, root Infusion of leaves used in diabetes and decoction of roots is used for hypertension, sedation and in toothache; extract of leaves is anti- carcinogenic.
Tulsi	Leaves , seeds	Widely used in Cough, cold and fever. It possesses anti-fungal, antimicrobial, antiviral, insecticidal, activity. It is used in malaria, bronchitis and gastric disorders, it also lowers blood sugar levels.

Government of India launched National Natural Urban Health Mission of AYUSH for better urban health and wellbeing. The Ministry of AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy) is responsible for reviving the knowledge of the traditional health care system.

Environment balance is a must for the health of man and his environment, and then we can achieve sustainability of the planet earth. When we save our environment from the impact of various types of pollution and give priority to sanitation in daily life, then we will be able to live in a healthy environment and our body will also become healthy.

**INTEXT QUESTIONS 25.4**

Match the following-

- | | |
|-----------------------------------|----------------------|
| a. Ashwagandha | i. Ayurveda |
| b. Brahmi | ii. Stomach disorder |
| c. Traditional Health Care System | iii. Reduce Stress |
| d. Bahera | iv. Brain tonic |

**ACTIVITY**

1. Visit a nearby herbal garden / Park and make a list of the medicinal plants and its utility.

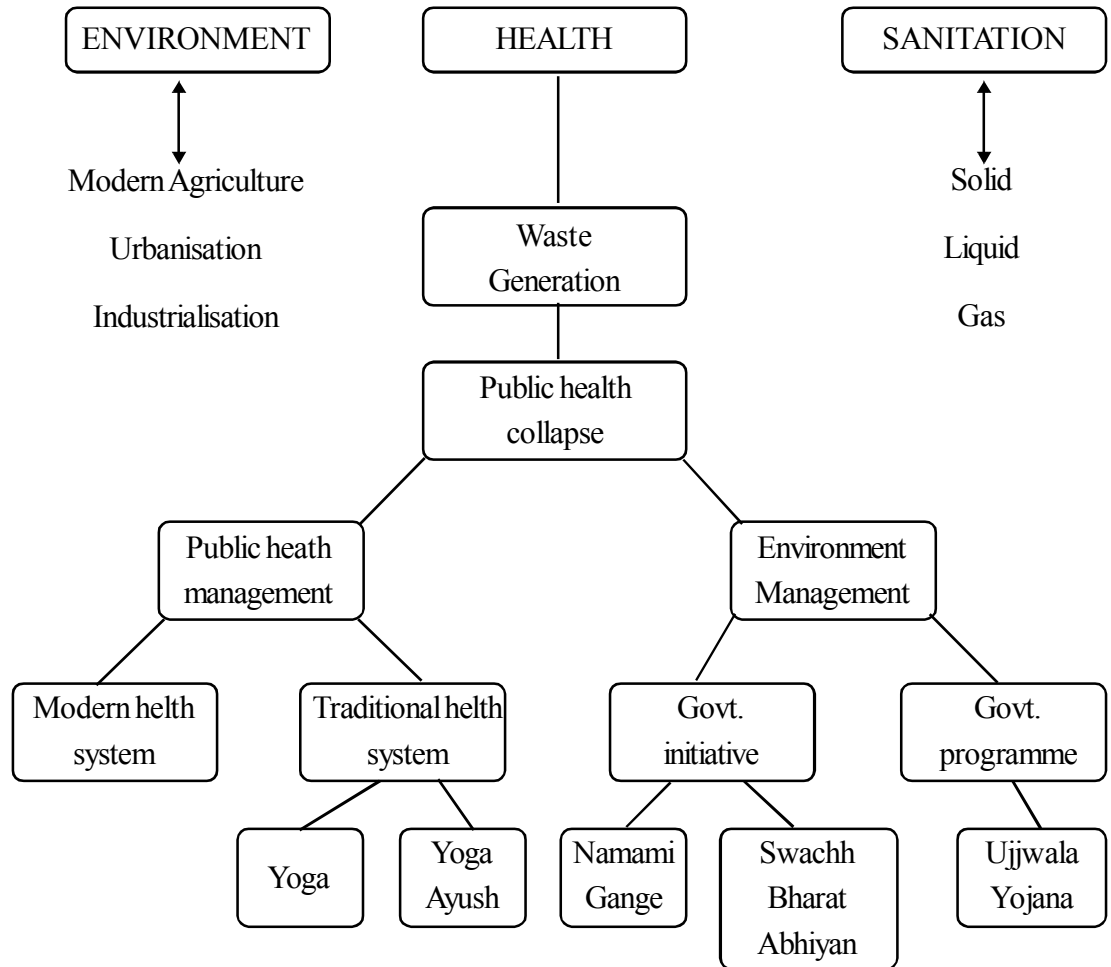
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Notes



WHAT YOU HAVE LEARNT



TERMINAL QUESTIONS

1. Which one is correctly matched?
 - i) Sanitation is more important than independence - Mahatma Gandhi
 - ii) "Sanitation is a way of life." - Dr.Margarreet Chan, Director- General, WHO
 - iii) "Sanitation is a cornerstone of public health - According to National Sanitation Foundation of the USA

2. Define Health and explain its 3 specific dimensions.
3. Write about 5 elements of the environment, why it is important for us.
4. How modern agriculture practices are responsible for various health issues.
5. What is Environmental Sanitation?
6. What do you understand about agents of diseases?
7. Elaborate linkages between various aspects of the Environment. Health and Sanitation with the help of a diagram.
8. Make a list of various types of pollutants which are harmful to our health.

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ANSWERS TO INTEXT QUESTIONS

25.1

- (i.) Health
- (ii.) 7th April
- (iii.) Disease
- (iv.) Hygiene
- (v.) Environment

25.2

- (i.) True
- (ii.) False
- (iii.) False
- (iv.) True

25.3

- (i.) 2014
- (ii.) Gandhi Jayanti
- (iii.) Women

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25.4

- (a.) iii.
- (b) iv.
- (c) i.
- (d) ii.