
UNIT 1 INTRODUCTION TO NATURAL ENVIRONMENT

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1.1 INTRODUCTION

We know that the magnitude, dimensions, and complexity of anthropogenic impacts on the natural environment are unprecedented. The developments in science and technology aid us in deciphering how environmental changes affect human well-being. Anthropogenic impacts on environment include both the direct and indirect effects. Nevertheless, technological prowess exhibited by the humans cannot be overestimated.

At the beginning of modern era, the number of people in the world was probably about hundred million. In 1960, human population was about 3 billion. Our population has more than doubled in the last 40 years. The impact of the growing human population on the environment is quite unprecedented. For instance, fossil fuel burning pumps the GHGs into the atmosphere and thereby affecting the

human health. If the current human population growth persists, the human population could reach 9.4 billion by 2050. The unparalleled challenge is to cater the needs of growing population given the limitations of finite resources and inability of our technological prowess to minimize the ecological footprints. How then can the earth sustain this entire people and what is the maximum number of people that could live on the earth not just for a short time but over a long time?

We are aware of the fact that the natural environment has a significant impact on the quality of our life, health and sustainability of planet. Increasing population, urbanization and industrialization across the world places an enormous pressure on ecosystem, which affects the quality of air, water and food that we consume to maintain our life styles. New chemicals and industrial processes are being rapidly developed and sometimes produce unforeseen risks to human health and to the ecosystems.

1.2 OBJECTIVES

After completing this unit, you will be able to:

- define the natural environment and linkages between people and natural environment;
- describe the segments of the environment namely atmosphere, hydrosphere, lithosphere and biosphere;
- explain the human influence on environment; and
- explain the environmental sustainability

1.3 EXPLORING LINKAGES BETWEEN PEOPLE AND NATURAL ENVIRONMENT

People and nature are intimately integrated. We depend on nature for tangible resources and enviable services of nature without which our existence itself is impossible. To highlight a few services of our natural environment, effortlessly, we would be reminded of climate relating function of atmosphere, absorption of powerful UV radiations by stratospheric ozone and many ecosystem services rendered by our aquatic ecosystem. Human population explosion and associated urbanization and industrialization had impacted negatively the virtues of natural environment. Today, the discipline of environmental science is enlightening us about the interaction between people and nature and enable us to capitalize the beneficial interactions. As environment become more and more recognized as important, we become more earth centred. We accept that we have evolved on and with the earth and are not separate from it and we understand the need to celebrate our union with nature as we work towards sustainability. The dichotomy of the 20th century is giving way to a new idea that a sustainable environment and sustainable economy maybe compatible; people and nature intertwined and a success for one involve a success for the other. In this regard, environmental scientists are interested in determining the effect of pesticides on crops, in learning how acid rain affect vegetation, determining the impact of introducing an exotic game fish species into a pond etc. During the early 1960's environmental science became an active field of scientific investigation driven by

both events and needs. The event that spurred environmental awareness includes the publication of Rachel Carson's silent spring (1962) along with other major environmental issues. The term environment and ecology are often used interchangeably but technically ecology refers only to the study of organism and their interaction with each other and environment. We damage the environment through the use, misuse and abuse of technology without fully understanding their long term effects on environment. The technological advances have provided us with nuclear power, the light energy, plastic, the internal combustion engine, air conditioning and refrigeration, genetic engineering, artificial intelligence, computer and scores of other advanced thing to live more comfortable. Many of these technologies, if not used properly affect the environment in ways we did not expect and in ways we may not be able to live with. Earth's natural resources and processes that sustain other species as well as humans are known as Natural capital. This includes air, water, soil, forest, grassland, wildlife, etc. Societies are the primary engines of resource use, converting material and energy into wealth, delivering goods and services and creating pollution. This provision of necessity and luxury is often conducted in ways that systematically degrade the earth natural capital, the ecosystem that support our life.

1.4 UNDERSTANDING OUR ENVIRONMENT

The origin of the word "Environment" is from the French word "Environ" which refers to "surrounding" or "to encircle". Environment can be defined as 1) the circumstances and conditions that surround an organism or group of organism 2) the social and cultural conditions that affect an individual or a community. Environment can also be defined as sum total of all external conditions and influences that affect the living organisms. Since human inhabits the natural world as well as the built or technological, social and cultural world, all constitutes important part of our surroundings. The environment comprises both biotic and abiotic factors. The 'natural environment' is made of living and non-living things (e.g., air, soil and water). Nevertheless, humans are integral part of the natural environment.

The concept of "environment" has evolved since it started to become a global issue in the early 1970s. At first, it was a kind of global recognition that the Earth's ecosystems are in fact fragile, and that human beings have been contributing much to its degeneration. When countries started to join efforts to strike a balance between improving the quality of human life and protecting the environment for the sake of future generations, a new awareness materialized. The social and economic welfare of human beings is closely linked to their environment. Any change in the socio-economic fields will have an impact on the earth's environment and vice versa, whether positively or negatively, immediately or eventually. And in many cases, negative results are irreversible. The Earth Summit held in Rio in 1992 concluded that the economic, social and environmental concerns are inescapably interlinked to development. Hence it pledged to eradicate environmental problems, reduce poverty and foster sustainable development through integrated efforts and global cooperation.

Natural environment can be subdivided into two parts viz. the physical environment, and the biological environment. The physical environment comprises of lithosphere, hydrosphere and atmosphere. The biological environment is called biosphere (bios=life). Modern biosphere where men's activity dominates are sometime called

as Anthrosphere or Neosphere. It includes besides natural environment complex of social, cultural and technological world that influences individual, community and ecosystem.

The biotic component of the environment interacts with the abiotic component of the environment leading unique ecosystems namely marine ecosystem, pond ecosystem, desert ecosystem, etc. As regards the living organisms of the ecosystem, they include mainly the producers, consumers, and decomposers. These organisms play a vital role in biogeochemical cycling of nutrients.

Check Your Progress 1

Notes: (a) Write your answers in about 50 words.

(b) Check your progress with possible answers given at the end of the unit.

1) What do you understand by environment?

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2) Explain the linkages between natural environment and people.

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1.5 SEGMENTS OF ENVIRONMENT

There are four different segments of environment such as atmosphere, hydrosphere, lithosphere and biosphere.

1.6 ATMOSPHERE

Earth’s atmosphere is unique. It is often described as thin veil, blanket of gases that surround the planet.

1.6.1 Chemical Composition

Atmospheric air is mixture of many gases that also holds many suspended liquid droplets and solid particles. Only two gases comprise about 99% of volume of air near the earth. The approximate composition of dry air, by volume at sea levels, Nitrogen 78%, oxygen 21% (necessary for life as we know it), argon 0.93%, and carbon dioxide 0.04%, together with very small amounts of numerous other constituents (see table 1.1).

Table 1.1 Composition of Air/ Earths Atmosphere

GAS	CHEMICAL/SYMBOL	VOLUME%
NITROGEN	N ₂	78.08
OXYGEN	O ₂	20.94
CARBON DIOXIDE	CO ₂	0.04
ARGON	Ar	0.093
NEON	Ne	0.0018
HELIUM	He	0.0005
KRYPTON	Kr	TRACE
XENON	Xe	TRACE
OZONE	O ₃	0.00006
HYDROGEN	H ₂	0.00005

Source: De 2010

Because of the constant mixing by the winds and other weather factors, the percentage of gases in the atmosphere are normally constant. However, water vapour content is highly variable and depends on atmospheric conditions.

1.6.2 Layers of the Atmosphere

The atmosphere is composed of a series of four concentric layers: Troposphere, Stratosphere, Mesosphere and Thermosphere. These layers vary in altitude and temperature with latitude and seasons.

1.6.2.1 Troposphere

The troposphere extends to a height of approximately 12 km. The temperature of the troposphere decreases with increasing altitude by about 6 C° (11°F) for every kilometre. Weather including turbulent wind, storms and most clouds occurs in the troposphere. Tropopause is the top of the troposphere, which is a transition layer between Troposphere and Stratosphere.

1.6.2.2 Stratosphere

In the next layer of atmosphere, the stratosphere, there is a steady wind but no turbulence. The stratosphere extends from 12 km to 50 km above earth surface. Temperature is more or less uniform in this layer (-45 C° to 75 C°). Stratopause is the top of the stratosphere, which is a transition layer between Stratosphere and Mesosphere. It contains a layer of ozone critical to life because it absorbs suns damaging ultra violet radiation. Ozone absorbs radiant energy from the sun and hence warmer temperatures are encountered in the stratosphere.

1.6.2.3 Mesosphere

Mesosphere is the layer of atmosphere directly above the stratosphere where temperature decreases with height, extends from 50km to 80km above the earth surface. Temperature drops steadily in the mesosphere to the lowest in the atmosphere as low as -138 C°. Mesopause is the top of the mesosphere, which is a transition layer between Mesosphere and Thermosphere.

1.6.2.4 Thermosphere

The Thermosphere extends from 80km to 480km above earth surface and is very hot. Gases in the thin air of the atmosphere absorb X-rays and short wave ultraviolet radiation. This absorption drives the few molecules present to great speed, raising the temperatures in the process to 1000°C or more. The Thermosphere is important in long distance communications because it reflects outgoing radio waves back to earth without the aid of satellites.

1.6.3 Functions of Atmosphere

The atmosphere performs several ecologically important functions.

1. It protects Earth's surface from most of the ultra violet radiation, X rays and cosmic rays from space. Without the protective blanket of atmosphere, most life would cease to exist.
2. The atmosphere protects the earth from the high energy radiation, it allows visible light and some infra-red radiation to penetrate, and these warm the surface and lower atmosphere. This interaction between the atmosphere and the solar energy is responsible for the phenomenon of weather and climate.
3. It provides life sustaining oxygen, the macro-nutrient Nitrogen and Carbon dioxide needed for photosynthesis.

1.7 HYDROSPHERE

Hydrosphere encompasses water bodies namely oceans, streams, lakes, ponds, rivers, etc. This comprises all water resources both surface and ground water. Approximately, 326 million cubic miles of water cover much of the planet, but only 3% of this total water is fresh water. Three quarter of fresh water is found in polar icecaps and glaciers and unavailable for human use, and nearly all the remaining one quarter (ground water) is found under the earth crust in water bearing rock and or sand or gravel formations. Only a small proportion (about 0.05%) of all fresh water on earth is found in lakes, rivers, stream or the atmosphere. Obviously, this seems a small amount relative to Earth's total water supply. But it is more than enough, even this small amount if we keep free from pollution and distribute evenly, could provide for drinking, food preparation and agriculture needs of all people. We simply need to learn how to better manage and conserve fresh water available to us. Ground water and surface water are essentially one resource, both physically connected by the hydrological cycle. Ground water is created by the run-off surface water and that's why they are united as one.

1.8 LITHOSPHERE

The Earth is made up of a series of concentric rock zones namely crust, mantle and core. The upper part of the mantle to depths of about 100 km is solid and together with the crust forms a relatively rigid unit known as lithosphere.

1.8.1 The Crust

Above the mantle is crust, which forms the outer skin of the earth. The thickness of crust ranges from 6km under the ocean to 70km under mountainous region. Although the crust forms a very small part of the Earth as a whole, we gather

practically all the resources to sustain our life.

Soil is the layer of bonded particles of sand, silt and clay that covers the land surface of the earth. Most soil develops multilayer. The top soils are the layer in which plant grows. This layer is actually an ecosystem composed of both biotic and abiotic components; inorganic chemicals, air, water, decaying organic material that provides vital nutrient for plant photosynthesis and living organisms. Below the topmost layers is the subsoil, which is much less productive, partly because it contains much less organic matter. Below this is parent material, the bedrock or the other geological material from which the soil is ultimately formed. The general rule of thumb is that it takes about 30 years to form one inch of topsoil to be formed from the parent material, the length of time depending on the nature of the underlying matter.

By mass the four most abundant elements in the earth are iron, oxygen, silicon and magnesium, which together accounts for approximately 93% of earth's crust. Nickel, sulphur, calcium and aluminium together make up another 6.5%. The remaining 0.5% or so of the earth's mass is made up of 84 naturally occurring elements.

1.8.2 The Mantle

The Earth's mantle, which lies between the core and the crust, is approximately 2900 km thick. The relatively thin upper part of the mantle is solid and rigid but the layer below it called as asthenosphere; although essentially solid, is able to flow extremely slowly.

1.9 BIOSPHERE

Biosphere can be construed as a life layer as it boasts of all the living organisms ranging from micro-organisms to macro-organisms. The biosphere extends from the bottom of the ocean approximately 11,000 meters below the surface, to the tops of the highest mountains about 9,000 meters above sea level. Although life exists throughout the biosphere, it is rare at the extremes, where conditions for survival are less than optimum. Most living things are concentrated in a narrow band extending from less than 200 meters below the surface of the ocean to about 6,000 meters above the sea level. The biological richness of biosphere is a function of factors like rainfall, temperature, etc.

The biosphere consists of all living organisms, energy and physical environments and there are continuous interactions between living and non-living organisms and physical environments and among the living organisms themselves. The biosphere is considered as an open system as there is continuous flow of energy and output of matter. As long as the balance is maintained between the input of energy and matter and output of matter, the biosphere systems remains in equilibrium condition but when this critical balance is disturbed several ecological and environmental problems emerge. In natural state biospheric system is self sustaining and ecologically efficient, depending upon the intimate relationship between various components of biosphere and large scale cyclic mechanisms as this cycles influence the biotic, abiotic and the energy components of biosphere.

Check Your Progress 2

Notes: (a) Write your answers in about 50 words.

(b) Check your progress with possible answers given at the end of the unit.

1) What are the different segments of environment?

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2) What is the significance of atmosphere?

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1.10 RAMIFICATIONS OF ANTHROPOCENE ON NATURAL ENVIRONMENT

An unbounded growth is infeasible due to limited resources, and carrying capacity is a measure of this limitation. In 1798, Thomas Malthus proposed an exponential growth curve in his Essay on the Principle of Population, stating that a population with constant fecundity greater than its mortality will grow exponentially till it causes inevitable conflicts with the limited supply of resources. Diminishing resources and the expanding population will inevitably lead to scramble competition. Malthus's idea has further inspired Charles Darwin to adopt resource competition as one prerequisite of evolution via natural selection. Catton (1986) defined an environment's carrying capacity as its maximum persistently supportable load.

1.10.1 The Human Dimensions of Global Environmental Change

Present global environmental change can, to a large extent, be attributed to anthropogenic activities. Human interferences with the Earth's system are so significant that the recent era has been suitably named the "Anthropocene". Human activity continues to intensify sharply and increase pressures on the Earth's resources and, for instance, on the planet's capability to assimilate wastes. Rapid population growth and overpopulation has far reaching effect - ecological, economical and societal. The increasing population is putting greater burden on the earth natural resource base and environment.

The population growth may have positive or negative effects on the natural

environment and wellbeing of human beings. Let us take for example the case of urbanization. A population shift toward urban areas means that a larger share of people will have access to health care, education, and other services; living standards are likely to improve. Greater population densities will enable more communities to capitalize on economies of scale. And concentrating population within an urban area can preserve adjacent natural habitat, assuming that urban sprawl is contained. At the same time, dense urban populations may produce more waste than the environment can absorb, leading to significant air and water pollution and a greater incidence of infectious and parasitic diseases. Cities often develop near fragile coastal areas or rivers or adjacent to fertile agricultural land. Rapid urban growth often takes over farmland, destroys wildlife habitats, and threatens sensitive ecosystems and inshore fisheries. Urban populations generally use more water for domestic and industrial purposes than rural populations.

1.10.2 Carrying Capacity

In ecology, carrying capacity is normally defined as the maximum population of a given species that can be supported indefinitely in a defined habitat without permanently impairing the human carrying capacity. Our planet is practically a closed system in terms of physical resources, and all human activity depends on these limited resources. Due to the increasing world population and the rapid diminishing of pristine ecosystems from our exploration for consumption, the concept of carrying capacity is essential and should be considered paramount in our future planning. The Club of Rome has warned us the possible consequences of world population growth and industrialization for food production and resource exhaustion.

The Earth's ecosystems and its human population are inherently connected. Earth sustains human activities by providing services like raw materials and energy. However, human activities tend to affect the natural resources and ecosystems. Environmental pollution adversely affect human health and wellbeing. An ecosystem consists of plants, animals (including humans) and micro-organisms that live in biological communities and which interact with each other and with the physical environment, enabling energy flow and biogeochemical cycling of nutrients. These interactions, for instance among species in a food web and their relation to biogeochemical cycling, are complex, non-linear, and contain lags and discontinuities, thresholds and limits. Consequently, ecosystems are considered complex, self-organizing systems, across both temporal and spatial scales. Ecological systems and their services play a fundamental role in supporting life on Earth at all hierarchical scales. For instance, they are essential in global material cycles like the carbon and water cycles.

1.10.3 Loss of Ecosystem Services

The Millennium Ecosystem Assessment 2001 defines "ecosystem services as the benefits people obtain from ecosystems" and classes services into four categories; Provisioning services provide goods such as food, freshwater, timber, and fibre for direct human use. Regulating services maintain a world in which it is biophysically possible for people to live and provide benefits such as pollination of crops, water damage mitigation, and climate stabilization. Cultural services make the world a place in which people want to live; they include recreation as well as aesthetic, intellectual, and spiritual inspiration. Supporting services are the underlying ecosystem processes that produce the

direct services described above, including the preservation of options; they include such services as nutrient cycles and oxygen production. Ecosystem services whether the provisioning or cultural kind matter and contribute to the well-being of humans. Food, fertile soils, clean water and recreation are just a few of the many services provided by nature to humans. The provision of these services, the reliability of supply, their quantity and quality, influence human security, basic material for a good life, health, good social relation and ultimately our freedom and choices, in short our well-being. Although people are often buffered from the natural environment by culture and technology, ultimately our livelihoods, health and even survival are completely dependant on ecosystem services and our access to them. Social systems and natural systems are inseparable and there is an increased use of terms such as socio-ecological systems. However, human action is changing many aspects of the earth's environments, its climate, land cover, oceans and the biochemistry of the fundamental cycles that sustain life and the diversity of life itself.

Approaching carrying capacity means the deterioration of ecosystem services, the loss of biodiversity and habitat heterogeneity and the break down of ecosystem resilience. This could lead to irreversible change, enlarged uncertainty to the biosphere, and even a regime shift of the world's living and climate systems as human population continues to expand, the planet's pristine ecosystems are degrading at a rapid rate due to man-made global environmental changes – climate change, habitat loss, biological invasion, soil erosion, and pollution, to name a few. Ongoing agricultural intensification, overfishing, industrialization, and urbanization further transfer how seminatural ecosystems function and behave, create many novel ecosystems that face high disturbance and gene flow. The planet's greatest asset – biodiversity, 100 million species strong – is quickly losing its grip. The rapid loss of species is estimated to be between 1000 and 10 000 times higher than the natural extinction rate, reaching 10 000 species extinction per year many of which disappear before they have even been formally described. Human society relies heavily on the health of ecosystem functions, the provision of ecosystem services and the benefit from biological diversity for cleaning air and water, stabilizing weather, maintaining soil fertility, dissipating waste, controlling pests, pollinating crops, generating power and discovering new antibiotics, and providing food, timber, cloth, medicine, industrial material (coal, oil, gas, rubber, plastics, chemicals), together with minerals. We are not making anything new but utilizing products and services of the planet's ecosystem and physical system. To sustain humanity, we need to manage the planet's biosphere within its bearable margin to avoid disruptive regime shift and massive extinction; although some argue that we have already crossed the point of no return.

1.10.4 Environment and Health

Clean and hygienic environmental conditions are essential for health and wellbeing of humans. Common health impacts arise from air and water pollution and unhygienic conditions. Global environmental change which includes climate change, stratospheric ozone depletion, biodiversity loss, etc., have potential to affect human health. Health issues pertaining to air pollution include respiratory ailments, cardiovascular diseases; asthma and allergies, and other disorders. Since the interrelationship existing between environment and human health are complex, adoption of precautionary principle is widely accepted.

Sustainability is the capacity to endure. In ecology, the word describes how biological systems remain diverse and productive over time. For humans, it is the potential for long-term maintenance of well being, which in turn depends on the maintenance of the natural world and natural resources. Sustainability has become a wide-ranging term that can be applied to almost every facet of life on Earth, from local to a global scale and over various time periods. Sustainability is defined as a requirement of our generation to manage the resource base such that the average quality of life that we ensure ourselves can potentially be shared by all future generations. Development is sustainable if it involves a non decreasing average quality of life (Geir B. Asheim, "Sustainability," The World Bank, 1994). Long-lived and healthy wetlands and forests are examples of sustainable biological systems. Invisible chemical cycles redistribute water, oxygen, nitrogen and carbon through the world's living and non-living systems, and have sustained life since the beginning of time. As the earth's human population has increased, natural ecosystems have declined and changes in the balance of natural cycles have had a negative impact on both humans and other living systems. Paul Hawken has written that "Sustainability is about stabilizing the currently disruptive relationship between earth's two most complex systems; human culture and the living world. Evidence is strong that we are exceeding and eroding the earth's carrying capacity, that there are limits to growth on a finite planet. Effects are interactive, complex, unpredictable and escalating, as we head for a global average temperature rise of more than 2 degrees centigrade over pre-industrial levels. Sometimes 'environmental', 'social' and 'economic' are termed to be the three pillars of sustainability. Environmental sustainability is the context within which social and economic life happen.

Check Your Progress 3

Notes: (a) Write your answers in about 50 words.

(b) Check your progress with possible answers given at the end of the unit.

1) List down major human impacts on environment?

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2) What do you understand by environmental sustainability?

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1.12 LET US SUM UP

In this unit we have described the natural environment and linkages between nature and human being. We know that the Earth's environment is changing due to human activities. Undoubtedly, environmental change is occurring at all scales from local to regional to global level. The Global environmental change to a large extent is a product of human activities. These changes are to a large extent due to human activities, and they threaten the integrity and functioning of the ecosystems. Worse, future projected changes in the environment are likely to have even more severe consequences for safeguarding our natural environment and sustainable development.

1.13 KEY WORDS

- Acid Rain** : A rain or other forms of precipitation that is unusually acidic.
- Climate Change** : A change in weather over time and/or region; usually relating to changes in temperature, wind patterns and rainfall; although may be natural or anthropogenic, common discourse carries the assumption that climate change is anthropogenic.
- Ecological Footprint** : A measure of the area of biologically productive land and water needed to produce the resources and absorb the wastes of a population using the prevailing technology and resource management schemes; a measure of the consumption of renewable natural resources by a human population, be it that of a country, a region or the whole world given as the total area of productive land or sea required to produce all the crops, meat, seafood, wood and fibre it consumes, to sustain its energy consumption and to give space for its infrastructure.
- Ecosystem Services** : The role played by organisms, without charge, in creating a healthy environment for human beings, from production of oxygen to soil formation, maintenance of water quality and much more. These services are now generally divided into four groups, supporting, provisioning, regulating and cultural services.
- Ecosystem** : A region in which the organisms and the physical environment form an interacting unit
- Biosphere** : The zone of air, land and water at the surface of the earth that is occupied by living organisms
- Carrying Capacity** : The maximum population that an ecosystem can sustain.

1.14 REFERENCES AND SUGGESTED FURTHER

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ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

1. "Environ" which means "surrounding" or "to encircle". Environment can be defined as 1) the circumstances and conditions that surround an organism or group of organism 2) the social and cultural conditions that affect an individual or a community. Environment can also be defined as sum total of all external conditions and influences that affect the living organisms.
2. Natural environment which is subdivided into two parts: (1) The physical environment, which includes non-living things and (2) the biological environment, which includes all life forms. Biological environment or people interact with the physical constituent of environment and modify the natural environment.

Check Your Progress 2

1. There are four different segments of environment such as atmosphere, hydrosphere, lithosphere and biosphere.
2. It protects Earth's surface from most of the ultra violet radiation, X rays and cosmic rays from space. Without the protective blanket of atmosphere, most life would cease to exist. The atmosphere protects the earth from the high energy radiation, it allows visible light and some infra-red radiation to penetrates, and these warm the surface and lower atmosphere. This interaction between the atmosphere and the solar energy is responsible for the phenomenon of weather and climate. It provides life sustaining oxygen, the macro-nutrient Nitrogen and Carbon dioxide needed for photosynthesis.

Check Your Progress 3

1. Sustainability is the capacity to endure. Sustainability is about stabilizing the currently disruptive relationship between earth's two most complex systems; human culture and the living world. Evidence is strong that we are exceeding and eroding the earth's carrying capacity, that there are limits to growth on a finite planet. Environmental, 'social' and 'economic' are termed to be the three pillars of sustainability. Environmental sustainability is the context within which social and economic life happen.
2. Population produce more waste than the environment can absorb, leading to significant air and water pollution and a greater incidence of infectious and parasitic diseases. Rapid urban growth destroys wildlife habitats, and threatens sensitive ecosystems and inshore fisheries. Noise is an emerging environment and health issue. Climate change, depletion of stratospheric ozone, loss of biodiversity, and land degradation can also affect human health. The major environment-related health concerns are related to outdoor and indoor air pollution, poor water quality, poor sanitation and hazardous chemicals. The related health impacts include respiratory and cardiovascular diseases; cancer, asthma and allergies, as well as reproductive and neurodevelopment disorders. Fine particulate matter and ground-level ozone are the main threats to human health from air pollution.



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