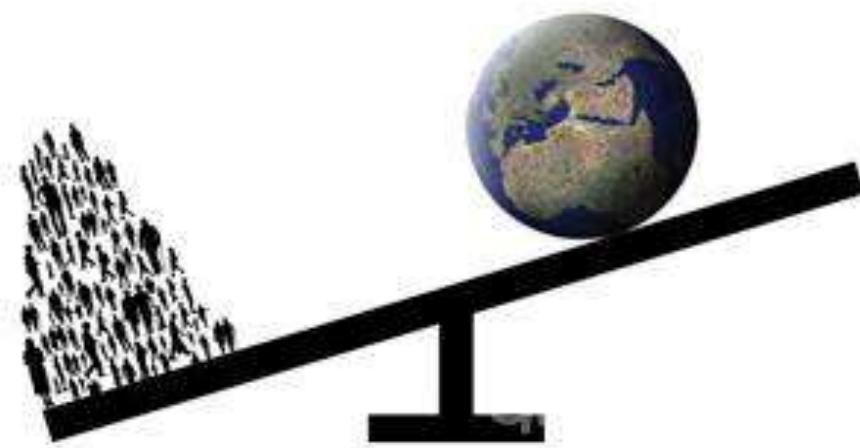


Chapter 6

Human Population and Environment



Introduction

- In earlier civilisation population control was there due to droughts, epidemics etc. In the 14th century 50% of the population in Asia and Europe were killed due to outbreak of plague.
- Owing to scientific and technological development , people are not well equipped to adapt to difficult environmental conditions and tremendous growth of medical sciences has lead to increased life expectancy.
- The population of World was 2.5 billion in 1950 has increased to 6.7 billion by 2008 and is expected to increase to 8 billion exerting huge pressure on the resources and leading towards a global environmental crisis.
- As a result of rapid growth in population majority of people live in undesirable conditions devoid of basic facilities such as sanitation, education, health facilities etc.

Population Growth

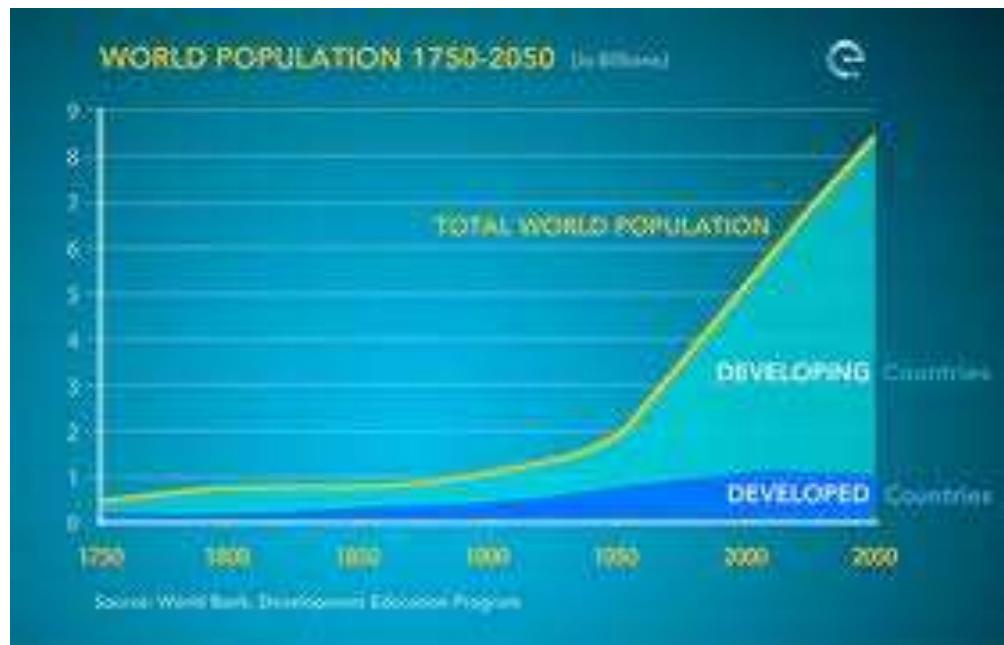
Increase in the number of individuals of human beings .

- Population growth rates might have declined, but in 2013 every 60 minutes there are another 8,000 people in the world: about 75 million every year.
- In demography, population growth is used informally for the more specific term population growth rate and is often used to refer specifically to the growth of the human population of the world.
- The world population grew from 1 billion to 7 billion from 1800 to 2011. During the year 2011, according to estimates, 135 million people were born and 57 million died, for an increase in population of 78 million.

Population Explosion

The rapid increase in population which outstrips the growth of national income and retards the per capita income.

The population of the world was 2.5 billion in 1950 has increased to 6.7 billion by 2008 and is expected to about 8 billion by 2020.



- By definition, overpopulation is a condition where the number of organisms exceeds the carrying capacity of their habitat.
- Overpopulation leads to scarcity of resources and economic inflation. The world population has crossed 7 billion and we are having to deal with the adverse effects of this excessive growth. The day is not far when we won't be left with sufficient resources to meet life's basic needs.
- Overpopulation is a serious issue, more serious than it seems to be. To nip it in the bud, we need to understand its root causes.

World Population Milestones

	1 billion in 1804		
	2 billion in 1927	(123 years later)	
	3 billion in 1960	(33 years later)	
	4 billion in 1974	(14 years later)	
	5 billion in 1987	(13 years later)	
	6 billion in 1999	(12 years later)	
	7 billion in 2011	(12 years later)	

Understanding Population Patterns

The study of the trends in human population is called demography. Three main factors decide the increase or decrease in population.

Birth rate – It is defined as number of births per thousand people in a geographical area. Birth rate is decline on an average and it will be 2 by 2050 from 2.56 children per women. This level varies among developing and developed countries.

Death rate – It is defined as number of deaths per thousand people in a geographical area. The advancement in the field of medicines have resulted in lesser no. of deaths leading to lower in death rate. This rate can change unexpectedly due to diseases, wars and other catastrophes.

Migration – It is defined as the rate of population change for a specific area which is also affected by the movement of people into and out of the area. Many developed countries of the world are experiencing an increase in population because of the continuing arrival of immigrants, people from developing countries to find better job.

Causes of Population Growth

Conquest of diseases

Improvement in Public Health

High infant mortality

Poverty

Preference for male child

Custom of early marriages

Illiteracy



Conquest of diseases

- Population has shown a remarkable increase during the past few decades.
- Advancement in medical facilities
- Awareness about nutrition, vaccinations, better health practices



Improvement in Public sanitation

- Public sanitation has been increased.
- Intensity of epidemic diseases such as cholera, typhoid ,dysentery has been lowered due to awareness, availability of clean water and better sanitation.
- Before 1990 , less than 50% of population had access to safe drinking water but after wards it is increased to 75%.

High Infant mortality

- In developing countries this rate is high but in the developed countries this rate is low because of safe drinking water and good medical care.

Poverty

- More children means more hands to work , more earning . But due to lack of money, no proper education, no awareness of various family planning measures.

Preference for sons

Due to illiteracy and old traditions, in many families the desire of son and often more sons results in more children. Another reason that encourage people for sons over daughters is the prevalence of the dowry system.

Early marriages

Early marriages, marriage of young children before they attended a marriageable age leads to more children

Illiteracy

lack of awareness of family planning measures, they have no access to information regarding family planning and hence largely involve in growth of population.

Consequences of Population Growth

- Increase in population has lead to several socio-economic problems.
- More deforestation activities arising to meet the requirements of fuel wood, agriculture, settlement and also for industrial establishments.
- Excessive exploitation of natural resources causing ecological imbalance in nature.
- The indiscriminate cutting of trees for agricultural expansion and timber products has lead to the degradation of watersheds affecting the water catchment areas.
- Due to population pressure, water resources are exploited more for various uses including domestic, livestock and industrial use.
- Population growth affects the natural resource availability. It causes increased demand for food, water, arable land and other essential materials, such as firewood.

- Unemployment problems of serious dimension both in urban and rural areas leading to reduced per capita earning, poverty, etc.
- Hunger deaths - because of reduced per capita food availability and poor distribution of food.
- Acute shortage of medical facilities including qualified doctors, medicines, dispensaries, modern health care facilities etc - due to high population.
- Shortage of education facilities including schools, colleges, qualified teachers.
- Serious shortage of power and problems connected with its distribution, Increased inflation.

- Increased borrowings from international organisations.
- Reduced care of young ones leading to increased child health problems as well as vulnerability of children to many diseases.
- Reduced health care to mothers.
- Difficulties encountered in implementation of all national and state developmental programmes.
- Increased government expenditure.
- Increased density of population.

Variations among nations

The rate of population growth are depended on climatic conditions and reproductive potential of the countries and may vary among countries and also between different regions of the same country.

Some countries experience negative population growth, especially in Eastern Europe mainly due to low fertility rates, high death rates and emigration.

In Southern Africa, growth is slowing due to the high number of HIV-related deaths.

Some Western Europe countries might also encounter negative population growth. Japan's population began decreasing in 2005.

It has been observed that some developed countries have high population growth rates, this may be due to the effect of high immigration of people from developing countries.

Growth rates of the world's most populous countries

Rank	Country	Population 2010	Population 1990	Growth (%) 1990–2010
	World	6,895,889,000	5,306,425,000	30.0%
1	<u>China</u>	1,341,335,000	1,145,195,000	17.1%
2	<u>India</u>	1,224,614,000	873,785,000	40.2%
3	<u>United States</u>	310,384,000	253,339,000	22.5%
4	<u>Indonesia</u>	239,871,000	184,346,000	30.1%
5	<u>Brazil</u>	194,946,000	149,650,000	30.3%
6	<u>Pakistan</u>	173,593,000	111,845,000	55.3%
7	<u>Nigeria</u>	158,423,000	97,552,000	62.4%
8	<u>Bangladesh</u>	148,692,000	105,256,000	41.3%
9	<u>Russia</u>	142,958,000	148,244,000	-3.6%
10	<u>Japan</u>	128,057,000	122,251,000	4.7%

Factors affecting Variation of Population

Age of human settlement in the area: The area where human settlement have existed for a very long time are now recording extremely high rate of population growth compared to area where settlement are relatively new.

Means of transport and communication: Area that can be easily accessed by air, land and water are always densely populated due to ease with which trade and commercial activities can be carried on in theses areas. These areas are also utilized for agricultural and industrial purposes, which provide high job opportunities and more populations.

Cultural factors : Area occupied by nomadic tribes are always sparsely populated since they do not indulge in permanent agriculture and settlement and support their families by gathering wild fruits and other forest products and move on to newer places once resources get exhausted.

Kind of Soil: Areas that have abundance of fertile soil are more populated. Infertile and desserts are usually less populated compared to area around river valley.

Climatic conditions: Region with moderate climate are usually densely populated than regions that experiences extreme climatic conditions. Ex like Canada extremely low temperature and Rajasthan because of very high temperature are less populated.

Natural resources: Area having rich wealth of natural resources such as coal, water and forest are more populated. These resources help in the development of trade , commerce and industry.

Birth control

High population growth adversely affects the production of goods and products , availability of natural resources and hence the economy of the country.

There is an increase in 3 humans per second because of every 2 people that die in a second, five children are born. Such a high rate is called **population explosion**.

Birth rate can be reduced by adopting various birth control methods as follows

Temporary methods

Permanent Methods

Birth Control methods

Temporary Methods

- Mechanical methods
 - Diaphragm
 - Intrauterine Devices
- Chemical methods
- Natural methods

Permanent Methods

- Sterilization methods
- Abortion

Family Welfare Programme

Family welfare programme is different from the family planning since it does not involve the methods of family planning but also concerned with providing relevant education and awareness. It is a powerful tool to check the population growth in less developed countries, it can cause lowering of birth rate.

The success of the family welfare programme depends upon public awareness, education of women, proper family counseling and easy availability of the means of birth control. Better medical facilities and nutritional programmes also support such programmes.



Need of family welfare programme

- Decentralised area-specific planning based on need assessment.
- Emphasis on improved access and quality of services to women and children.
 - * Providing special assistance to poorly performing states/districts to minimise the differences in performance.
 - * Creation of district-level databases on quality, coverage and impact indicators for monitoring the programme.

In response to our phenomenal population growth, India seriously took up an effective Family Planning Program which was renamed the Family Welfare Program. Slogans such as ‘Hum do hamare do’ indicated that each family should not have more than two children.

Informing the public about the various contraceptive measures that are available is of primary importance.

Many countries like China has imposed some penalties for the families having excess no. of children, such as

- Return of bonus for the first child if second child is born.
- Payment of a tax for a second child.
- Payment of higher prices for food for a second child.
- Denial of maternity leave and paid medical expenses after first child.



Population and poverty

Poverty in India is widespread, with the nation estimated to have a third of the world's poor. In 2010, the World Bank reported that 32.7% of the total Indian people fall below the international poverty line.

Because of India's rapid population growth rate, even that advance, however, has not been sufficient to reduce the absolute number of poor, which increased from around 200 million in the 1950s to 312 million in 1993-94.

This leaves India with the largest concentration of poor people in the world, particularly in the villages — where 60 percent of all Indians live.

Health effects of pollution

Air pollution



Headache
Fatigue

Nerve damage
Lead
Particulate matter
Volatile organic compounds
CO
Ozone
SO₂, NO_x

Respiratory illness

Cardio-vascular illness

Gastroenteritis

Cancer risk
Nausea

Skin irritation

Water pollution



- Bacteria
- Parasites
- Chemicals

Soil contamination

