1. Details of Module and its structure

Module Detail	
Subject Name	Geography
Course Name	Geography 03 (Class XII, Semester - 1)
Module Name/Title	The world population distribution,density and growth – Part 2
Module Id	legy_10202
Pre-requisites	Basic concepts about World population distribution, density and growth
Objectives	After going through this lesson, the learners will be able to understand the following: • Spatial pattern of population change • Demographic transition • Population control Measures • Thomas Malthus Theory
Keywords	Demographic transition, Thomas Malthus theory, Population change

2. Development Team

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Births, deaths and migration are the major components of population change. Population growth in different parts of the world can be compared. The growth of population is low in developed countries as compared to developing countries. There is negative correlation between economic development and population growth. Although the annual rate of population change (1.4 per cent) seems to be low), it is actually not so. This is because:

- When a small annual rate is applied to a very large population, it will lead to a large population change.
- Even if the growth rate continues to decline, the total population grows each year. The infant mortality rate may have increased as has the death rate during childbirth

Population decline is also a matter of concern because it indicates that resources that had supported a population at given level have become insufficient to maintain that population. It is generally, agreed that a small increase in population is not undesirable in an expanding economy. However, population growth beyond a certain level may compound the problems in a developing economy. Growing populations are putting greater pressure on land and natural resources. In many places freshwater is already becoming scarce. Forests are disappearing. Soils are being degraded and fisheries over exploited. Population decline is also a matter of concern because it indicates that resources that had supported population at a given level have become insufficient to maintain that population. Unless the population decline could be reversed, the basic structure of the society itself might become unstable.Populationgrowth signals societal prosperity and progress as resource base grew. It may, however, be considered a distinct problem if land and other critical resources are scarce.In developed countries where resource base is sufficient or appears underutilised,

policies regarding promotion of population growth such as incentives for natural increase, substantial tax exemption for large families and accepting immigrants, are taken up. On the other hand, governments enact policies to curb the population growth if it is viewed as a problem. For example, many developing countries, such as, China and India have sponsored birth control programmes to slow the rate of natural population growth. The World Programme of Action (WPOA) would achieve this goal by expanding the women's role in family planning through literacy, education, and through reproductive-health and child-healthcare programmes, that would be available to all.

2. Impact of population change

A small increase in population is desirable in a growing economy. However, population growth beyond a certain level leads to problems. Of these the depletion of resources is the most serious. Population decline is also a matter of concern. It indicates that resources that had supported a population earlier are now insufficient to maintain the population.

The deadly HIV/AIDS epidemics in Africa and some parts of the Commonwealth of Independent States (CIS) and Asia have pushed up death rates and reduced average life expectancy. This has slowed down population growth.

The Doubling story….. it will take 36 years

The annual population growth rate in India is1.18 per cent.(20160) Data Courtesy World bank (http://data.worldbank.org/indicator/SP.POP.GROW). Some developed countries will take 318 years to double their population whereas some countries still do not show symptoms of doubling their population.

3. Demographic Transition

Demographic transition refers to the transition from high birth and death rates to lower birth and death rates as a country develops from a pre-industrial to an industrialized economic system. The theory was proposed in 1929 the American demographer Warren Thompson, who observed changes, or transitions, in birth and death rates in industrialized societies over the previous 200 years. Demographic transition theory can be used to describe and predict the future population of any area. The theory tells us that population of any region changes from high births and high deaths to low births and low deaths as society progresses from rural agrarian and illiterate to urban industrial and literate society. These changes occur in stages which are collectively known as the demographic cycle. Current

demographic trends revel that the annual average population increase among the developing countries is more than 20 times than that is the developed world. Although the Crude Death Rates (CDRs) in both groups are low, the average Crude Death Rates in developing countries are nearly three times more than that of the developed countries. Demographers (F.W. Notestein) recognise a close link between the processes of economic development and those of population growth.

As a rural agrarian society evolves into a technology –based urban society, there are changes in demographic trends. Demographic transition Model correlating changes in population dynamics with industrialisation and urbanisation processes associated with economic development.

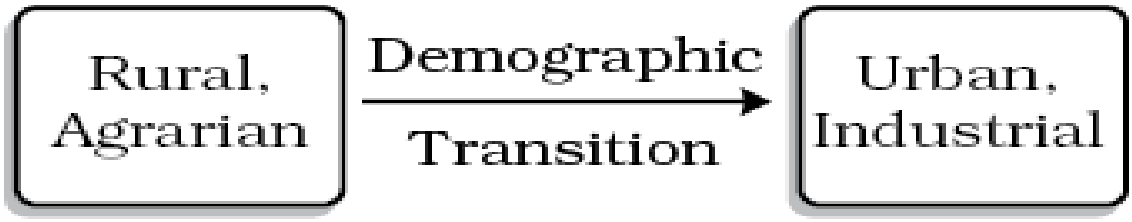

Fig No 01 Demographic Cycle

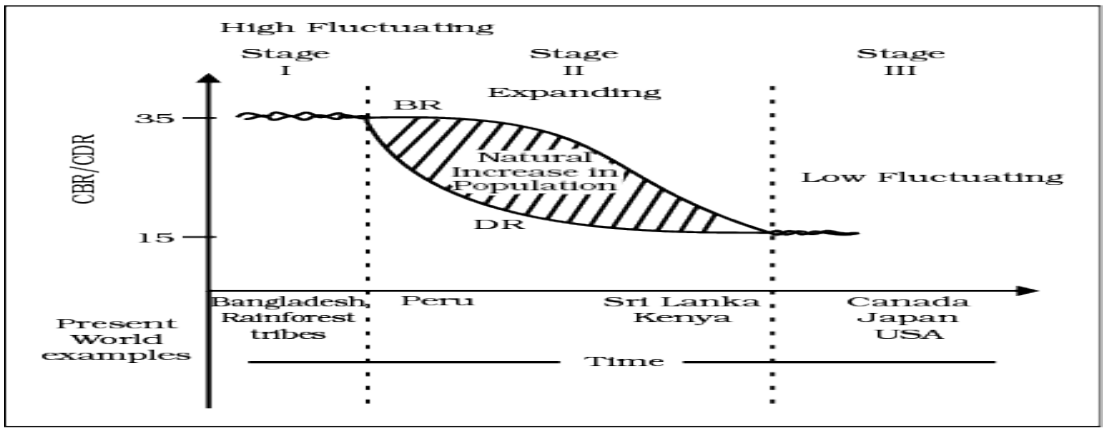

Fig. No 2 Demographic Transition Theory

(I) First Stage

The first stage of the model represents the demographic trends before the processes of economic development began. It portrays the demography of Europe prior to Industrial Revolution or that of Japan in the mid –nineteenth century, or perhaps a tribal community living in tropical forests in isolation. The community living tropical forests in isolation, the common characteristic is that the population is relatively small and stable net growth rate of above 1 per cent over time. Both the birth and death rate are very high, but the death rate

declines during periods of prosperity, and rises during times of famines disease or war. Life expectancy is low; people are mostly illiterate and have low levels of technology. Two hundred years ago all the countries of the world were in this stage. In pre-industrial society, death rates and birth rates were both high, and fluctuated rapidly according to natural events, such as drought and disease, to produce a relatively constant and young population. Family planning and contraception were virtually non-existent; therefore, birth rates were hi

(II) Second Stage

In the second stage begins with technological revolutions that characterise early stages of economic development. In the eighteenth and the nineteenth century Europe and North America, it was the Industrial Revolution that initiated transportation, agricultural and medical revolutions. Agricultural improvements included crop rotation, selective breeding, and seed drill technology Together they gave rise to high levels of economic development. Improved diets, public health and medical care led to a sharp decline in death rates. Fertility remains high in the beginning of second stage but it declines with time. This is accompanied by reduced mortality rate. Improvements in sanitation and health conditions lead to decline in mortality. Because of this gap the net addition to population is high. . The result is a sharp increase in population growth.

The second stage may further be divided into three categories - beginning of the critical phase of population explosion, middle of population explosion and on the verge of completing the growth stage.

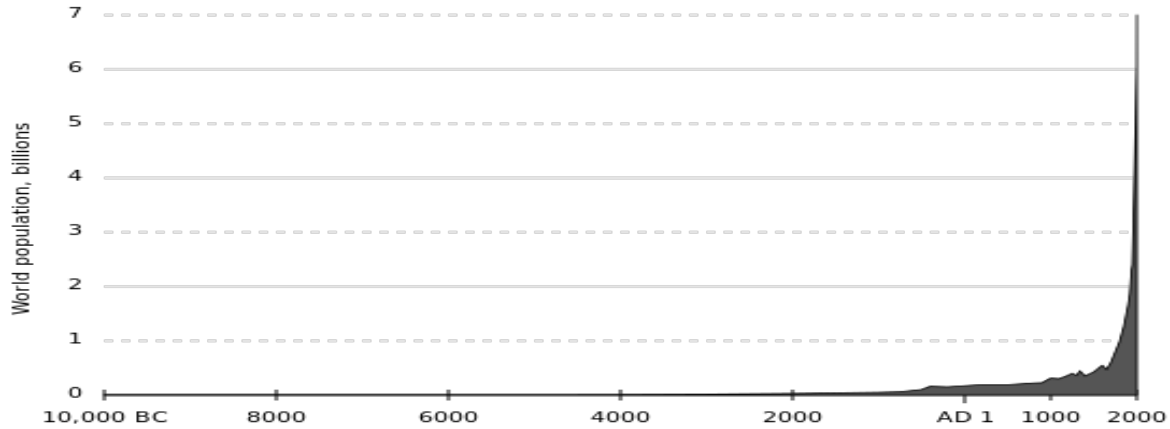

Fig. No 0 3 World population 10,000 BC - 2000 AD

https://en.wikipedia.org/wiki/Demographic_transition#/media/File:Population_curve.svg

(III) Third Stage

In the third stage, death rates even off at a low level, while birth rates are low but fluctuating with net growth rates near Zero. Both fertility and mortality decline considerably. The population is either stable or grows slowly. The population becomes urbanised, literate and has high technical knowhow and deliberately controls the family size. Increasing female literacy and employment lowers the uncritical acceptance of childbearing and motherhood as measures of the status of women. Improvements in contraceptive technology are now a major factor. Fertility decline is caused as much by changes in values about children and sex as by the availability of contraceptives and knowledge of how to use them.

This shows that human beings are extremely flexible and are able to adjust their fertility. In the present day, several fertility factors contribute to this eventual decline.

Fig No; 04 Kuala Terengganu, Terengganu, Malaysia.

https://en.wikipedia.org/wiki/Demographic_transition#/media/File:Familyplanningmalaysia.jpg

Demographic trends in the developing World do not reflect the same trends as seen in Europe and North America. Population has grown rapidly during the past several decades due to improved health and longevity. But there is a wide variation among the developing countries in the time taken for moving from one phase to the other. In recent years family planning programmes have contributed to the decline in growth rates. The most significant reduction in population growth has occurred in those Asian and Latin American Countries, where birth rates have declined in response to response to economic development urbanisation and socio-cultural change as reflected through the acceptance of family planning. However, most of Africa and some Asian and Latin American countries have remained in the high-growth phase of demographic transition for several decades because cultural tradition of of large families and high fertility has remained strong. As such there is

no assurance that these countries will experience the economic and societal changes that led to decline in birth rates in the economically developed countries. So far, at least in a significant part of developing world, the sharp decline in birth rates that occurred in the last part of stage II in the demographic transition model is still speculative.

Despite non-resemblance to the demographic transition model, several features remain valid-

- Virtually all nations have experienced a decline in death rates sometimes before' birth rates began to fall;
- Until recently, population changes in developing world mainly reflected changes in developing world mainly reflected changes in death rates. Now the average death rate in the developing world stands at about 9 per thousand and more than 90 developing countries with youthful population have death rates that are currently below the average death rates experienced in the mature population of the developed countries. Birth rate trends in the developing countries will be the main determinant of population size just as they have been for decades in the developed world. Fertility. Besides birth and death rates, two "variables also play an important role in predicting demographic trends: Total Fertility Rate (TFR) is the average number of children born to women. Another factor which directly affects birth rates is population structure, especially the age composition of a population.

4. Population Control Measures

Family planning is the spacing or preventing the birth of children. Access to family planning services is a significant factor in limiting population growth and improving women's health. Propaganda, free availability of contraceptives and tax disincentives for large families are some of the measures which can help population control .

Fig No; 05

https://upload.wikimedia.org/wikipedia/commons/8/88/Family_Planning_8c_1972_issue_U.S._stamp.jpg

It is very important for People to understand the consequences of having too many children. Government and non-government institutions carry awareness campaigns informing people how they will be unable to provide good nutrition, education or medical facilities to their children if they have too many. Population is the major reason for illiteracy and diseases and malnutrition. The negative effects of it are required to be communicated to the general public.

Delayed marriages

The problem of child marriage is there in certain countries with high population like India, Pakistan or Bangladesh. A marriage at a tender age leads to a long span for giving birth. Also young age marriage people without the education and awareness need to understand the consequences of raising too many children.

Medical facilities

Due to limited and highly centric medical facilities , high rural-urban divide in developing countries, availability of good hospitals and doctors is limited to urban centers, which results in high infant mortality rate in rural area .To ensure that at least some of their kids survive people give birth to more and more kids which contributes to the population growth. If provided with optimum medical facilities population rate will almost certainly decline.

Providing incentives

Providing health, educational or even financial incentive can be a highly effective population measure. There are certain incentive policies like paying certain amount of money to people with not more than two kids or free or discounted education for single child etc.

5. Women Empowerment

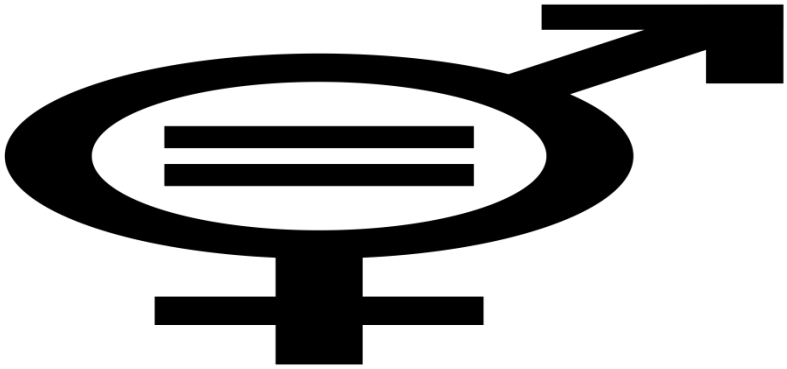

Fig No; 06

https://upload.wikimedia.org/wikipedia/commons/thumb/2/2a/Igualtat_de_sexes.svg/2000px-Igualtat_de_sexes.svg.png

In most developing countries, the women folks are not considered equivalent to men. Gender discrimination is a major reason for population growth. People keep giving birth to kids in order to have more sons than daughters. Empowering woman and educating them to fight against discrimination will ensure a healthy and aware society.

6. Eradicate Poverty

Fig No; 07

https://en.wikipedia.org/wiki/National_Anti-Poverty_Commission_(Philippines)#/media/File:Seal_of_the_National_Anti-Poverty_Commission_Philippines.svg

Poverty has a direct relation to the population growth. In developing countries of Asia and Africa, child labour, slave trading and human trafficking is highly prevalent. African countries for example still have maximum reporting of slave trading though trading of humans is legally banned everywhere in the world. People give birth to kids and sell them to

rich people who in turn employ these kids in various laborious and unethical tasks. Even these parents force their kids to beg or work at a very tender so as to earn some extra money for the family. These people believe that more kids mean more hands for begging and work and thus more money. Without concrete measures for growth and poverty eradication, other methods of population control may prove to be ineffective.

7. Education

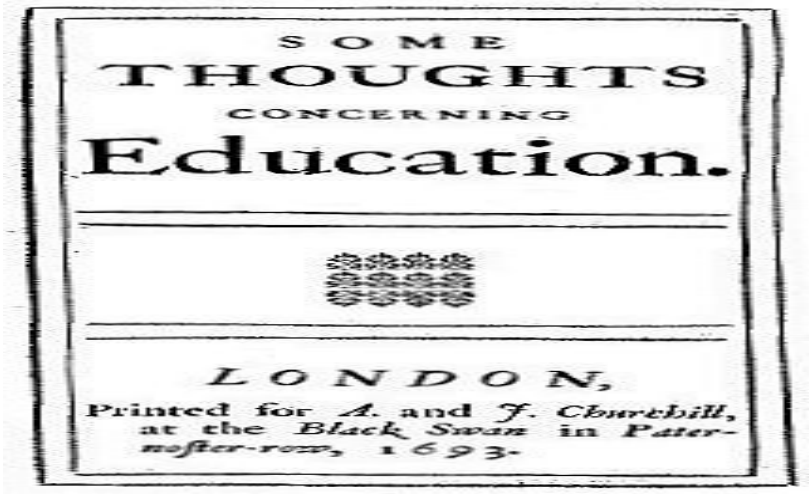
SOME
THOUGHTS
CONCERNING
Education.
LONDON,
Printed for A. and J. Churchill,
at the Black Swan in Pater-
noster-row, 1693.

Fig .No; 08.

https://en.wikipedia.org/wiki/Education#/media/File:LockeEducation1693.jpg

Education forms the backbone of an individual and economy. An educated population know and understand the harms of high population growth rate and the benefits of a small family . Education, especially women education, can work wonders in controlling the population.. Without sufficient education most measures like awareness campaigns and women empowerment will prove to be insufficient and pointless.

8 . Easy and cheap availability of contraceptives

Ensuring that people have easy and cheap access to contraception tools will help avoiding cases of unwanted pregnancies and births. Every state owned hospital should be made to provide cheaply efficient birth control medicines or surgeries since poor people have neither the means not awareness to use contraception. Use of condoms and contraceptives must be advertised and promoted along with ensuring cheap and ready access to these. Contraceptives do not only prove to be an important population control measure but also

prevents spreading of sexually transmitted diseases like AIDS thus ensuring small healthy families.

9. Development

Development of the enormous population and the increasing rate of population is the biggest challenge faced by the developing nations of Africa and Asia whereas the same is a little or no threat in developing countries like America, Europe or Japan. Lack of Development is due to majorly high poverty, high illiteracy, high discrimination, lack of awareness, lack of medical facilities which leads to population growth. By reducing discrimination between gender and class and ensuring development of the whole population instead of taking only a group of society would eliminate the challenge of population growth for once.

10. Legislative actions

Only family planning and use of contraception remains optional instead of mandatory. Strict legal steps are required for child marriage, education, abolition of child labour and beggary and family planning to get the desired results. Proper enforcement of laws related to child labour, slavery and beggary will ensure that parents don't sell their children or send them out to work thus forcing them to raise lesser number of kids.

Thomas Malthus Theory

Thomas Malthus in his theory (1793) stated that the number of people would increase faster than the food supply. Any further increase would result in a population, due to technology improvements, or negative, due to Famines, droughts, pest invasions, disease and wars. The preventive checks are better than the physical checks.

Fig .No 09 Thomas Robert Malthus

https://en.wikipedia.org/wiki/Thomas_Robert_Malthus#/media/File:Thomas_Robert_Malthus_Wellcome_L0069037_-crop.jpg

In his 1798 work, *An Essay on the Principle of Population*, Malthus examined the relationship between population growth and resources and developed the **Malthusian theory of population growth**. He wrote that population growth occurs exponentially, so it increases according to birth rate.

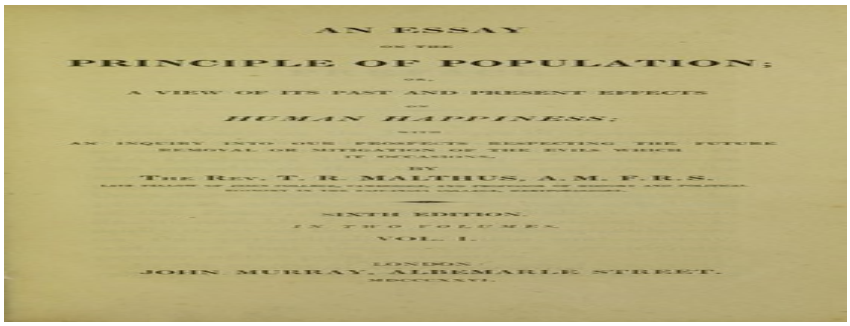
AN ESSAY
ON THE
PRINCIPLE OF POPULATION;
A VIEW OF ITS PAST AND PRESENT EFFECTS
ON
HUMAN HAPPINESS;
BY
THE REV. T. R. MALTHUS, A.M. F.R.S.
SIXTH EDITION.
VOL. I.
LONDON:
JOHN MURRAY, ALBEMARLE STREET.

Fig .No 10 *Essay on the principle of population*, 1826

https://en.wikipedia.org/wiki/Thomas_Robert_Malthus#/media/File:Malthus_-_Essay_on_the_principle_of_population,_1826_-_5884843.tif

For example, if every member of a family tree reproduces, the tree will continue to grow with each generation. On the other hand, food production increases arithmetically, so it only increases at given points in time. Malthus mentioned that, unchecked populations can outgrow their resources.

According to Malthus, there are two types of 'checks' that can reduce a population's growth rate.

Preventive checks are voluntary actions people can take to avoid contributing to the population. Because of his religious beliefs, he supported a concept he called **moral restraint**, in which people resist the urge to marry and reproduce until they are capable of supporting a family. This often means waiting until a later age to marry. He also wrote that there are 'immoral' ways to check a population, such as vices, adultery, prostitution, and birth control. Due to his beliefs, he favoured moral restraint and didn't support the latter practices.

Positive checks to population growth are things that may shorten the average lifespan, such as disease, warfare, famine, and poor living and working environments. According to Malthus, eventually these positive checks would result in a **Malthusian catastrophe** (also sometimes called a Malthusian crisis), which is a forced return of a population to basic survival.

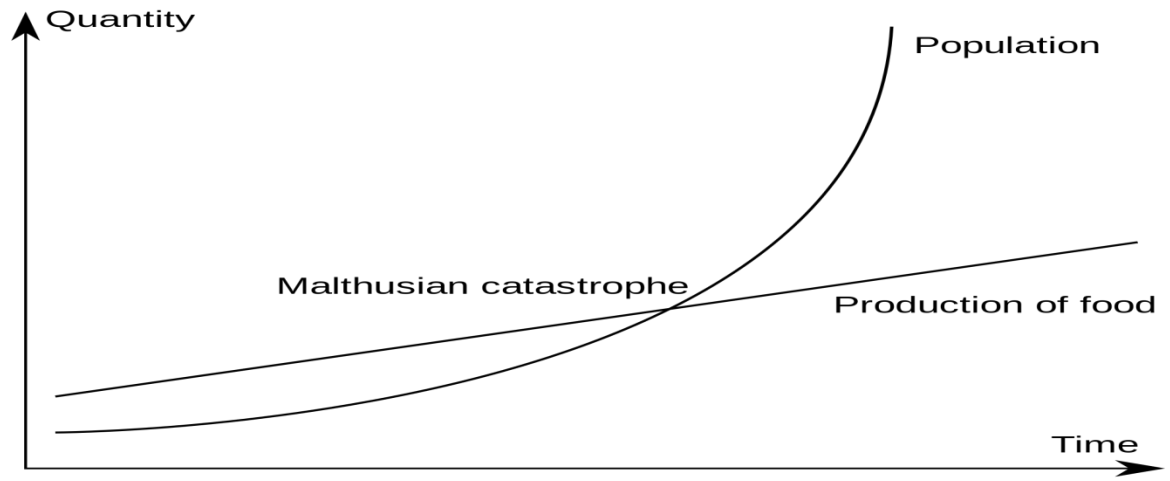

Fig No 11, shows as population increases exponentially and food production only linearly, a point where food supply is inadequate will at some point be reached https://upload.wikimedia.org/wikipedia/commons/thumb/d/d9/Malthus_PL_en.svg/2000px-Malthus_PL_en.svg.png

11. Conclusion

We may, thus, conclude that birth rates are directly affects the population structure, especially the age composition of a population. Comparison of birth rates and fertility rates will reveal the importance of this factor. In other words, areas with a high population of young adults may be expected to have high birth rate figures. New towns, pioneer settlements and regions with high migration rates influencing the level of fertility in any area are largely economic, social and cultural rather than physical. For the sustainability of our resources, the world will have to control the rapid population increase.