

Population Growth Theories - Fertility of man - Godwin

Thomas Robert Malthus - 1766-1834 - Jesus college at Cambridge - Mathematics  
 Professor of History and Political Economy - Haileybury College - East India Company

1798 - An essay on the Principle of Population as it affects the future improvement of society (with remarks on the Speculations of Mr. Godwin, M. Condorcet and others)

1803 - Second edition

i. Essay on Population  
 ii. Principles of Political Economy - 1826  
 iii. An Essay on the Principle of Population - 1798

1826 - Sixth " An essay on the principle of population on a view of its past and present effects on human happiness, with an inquiry into our prospects respecting the future removal or mitigation of the evils which it occasions

1872 - posthumously

Paul Ehrlich - The Population Bomb - 1968  
 Bourgeois Values - Frugality, Sobriety, Responsibility  
 Adam Smith - Wealth of Nations

Basic assumptions or Propositions

- 1) Food is necessary for human existence
- 2) the passion between sexes is necessary and would continue in the present state
- 3) Law of diminishing return in agriculture

Basic characteristics of the

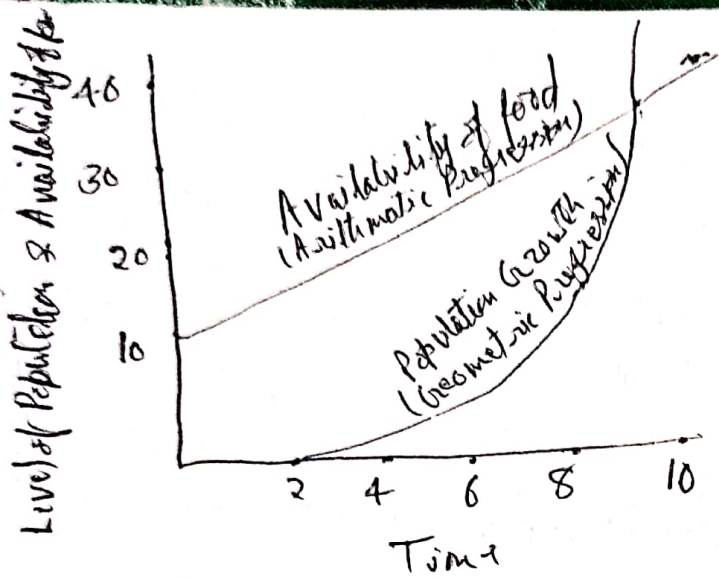
- 1 Population - Geometric progression - Population tends to double in 25 years
  - 2 Subsistence - Arithmetic
  - 3 Imbalance in population and production - Law of diminishing return
  - 4 Measure of population checks - Human action and natural factors
- The table of nature is limited, land for limited number of people and those who come uninvited must starve.

1 Positive checks - Human action and natural factors  
 Wars, dangerous occupations, Famines, Epidemics, natural calamities

2 Preventive checks - decline in birth rate - moral restraint, late marriage, abstinence from sex, celibacy  
 A baby comes to the world not only with a mouth and stomach but also with a pair of hands

Kenneth Smith - opportune circumstances

- 1) Limitation of supply of land - rotation of crops, wheat, Green revolution
- 2) Industries & fast means of transport
- 3) widespread use of contraceptives
- 4) Wrong Assumptions
- 5) Surgey population growth rate
- 6) Sex desire and desire of child



Balance in Population and Availability of Food

Population Growth in Geometric Progression  
1, 2, 4, 8, 16, 32, ...

Growth in availability of food with arithmetic  
1, 2, 3, 4, 5, 6, ...

Imbalance in population and availability of food  
and its preventive checks

Positive check

Preventive check

Balance in population and availability of food

Theory of Optimum Population - First use - Cantabrigia - 18th Cen

Edward Conner (1861 - 1935) - British economist

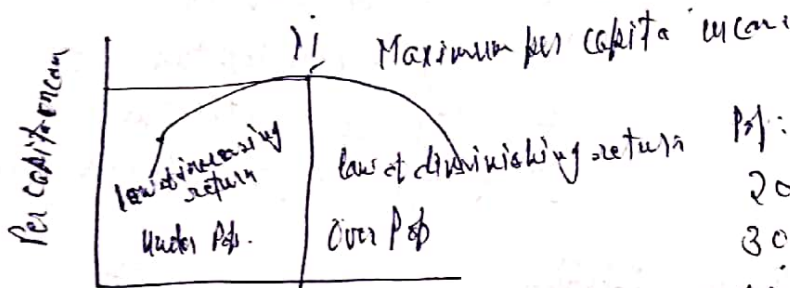
At any given time, the population which can exist on a given extent of land, consistent with the greater productivity of industry at that time is definite.  
 Datta - Maximum per capita income

Robbins - Maximum return  
 Saunders - Maximum economic welfare

Balding (1932) - Maximum standard of life

Assumption

- (1) The ratio between working population and total population remains the same
- (2) Increase in production leads to increase in per capita income
- (3) Increase in population does not lead to increase in natural and cultural resources



Pop.	G.P.	Per capita inc.
20	400	20
30	750	25
40	1200	30
50	1250	25
60	1320	22

Actual population Size of Pop. optimum population  
 $M = \frac{A - C}{C}$   
 Positive - over pop.  
 Negative - under pop.

Maladjustment  
 Criticism

- (1) It is not theory - why and how
- (2) Ignores distribution aspect of National income
- (3) Emphasis on material aspect
- (4) The concept of optimum point is not correct
- (5) Does not propagate any population policy

Basic characteristics

- (1) Maximum GNP
- (2) Full employment
- (3) High standard of living
- (4) Full utilization of resources
- (5) Demographic structure
- (6) Development without pollution
- (7) Long life expectancy
- (8) Low dependency ratio

Coale and Hoover - One-fourth of the rural population of India was useless

Survey - (convenient too)



## Marxist View

There could be no natural or universal law of population growth  
Communist Manifesto & Das Kapital - Marx

Origin of family - Engels

Bourgeois <sup>less fertility</sup>      Proletariats <sup>more fertility</sup>

Birth control contributes to the emancipation of women - happy maternity and creative work

Labour      object      Machine  
Labour

- Stages of Society
1. Stage of primitive communism
  2. Stage of slavery
  3. Stage of feudalism
  4. Stage of capitalism
  5. Stage of socialism

## Optimum Population

The optimum population is that population which produces maximum economic welfare. Maximum economic welfare is not necessarily the same as maximum real income per head but for practical purposes they may be taken as equivalent.

अनुकूलतम जनसंख्या वह जनसंख्या है जिससे अधिकतम आर्थिक कल्याण की प्राप्ति होती है। यह आवश्यक नहीं है कि अधिकतम आर्थिक कल्याण प्रति व्यक्ति उत्पन्न का होना हो, लेकिन व्यवहारिक दृष्टि से इन दोनों को समतुल्य माना जा सकता है।  
- (Dr. Srinivasan)

## Rostow's Stage of Economic and Population Growth

The stages of economic growth - 19

1. The traditional society
2. The preconditions for take off
3. The take-off
4. The drive to maturity
5. The age of high mass consumption

# Demographic Transition Theory

F. W. Notestein (1945) - Demographic Cycle (Australia) U.S. Thompson (1929)

- Step 4
- (i) High Growth Rate उच्च वृद्धि दर (अवस्था)
  - (ii) Decreasing Growth Rate इसका वृद्धि दर (अवस्था)
  - (iii) Population decrease जनसंख्या इस अवस्था)

- Karl Sax & G.T. Trenchard, 1948
- (i) High stationary stage उच्च स्थानी अवस्था)
  - (ii) Early expanding stage प्रारंभिक वृद्धि (अवस्था)
  - (iii) Late expanding stage उत्तर वृद्धि (अवस्था)
  - (iv) Low stationary stage निम्न स्थानी अवस्था)
  - (v) Declining stage इसका अवस्था)

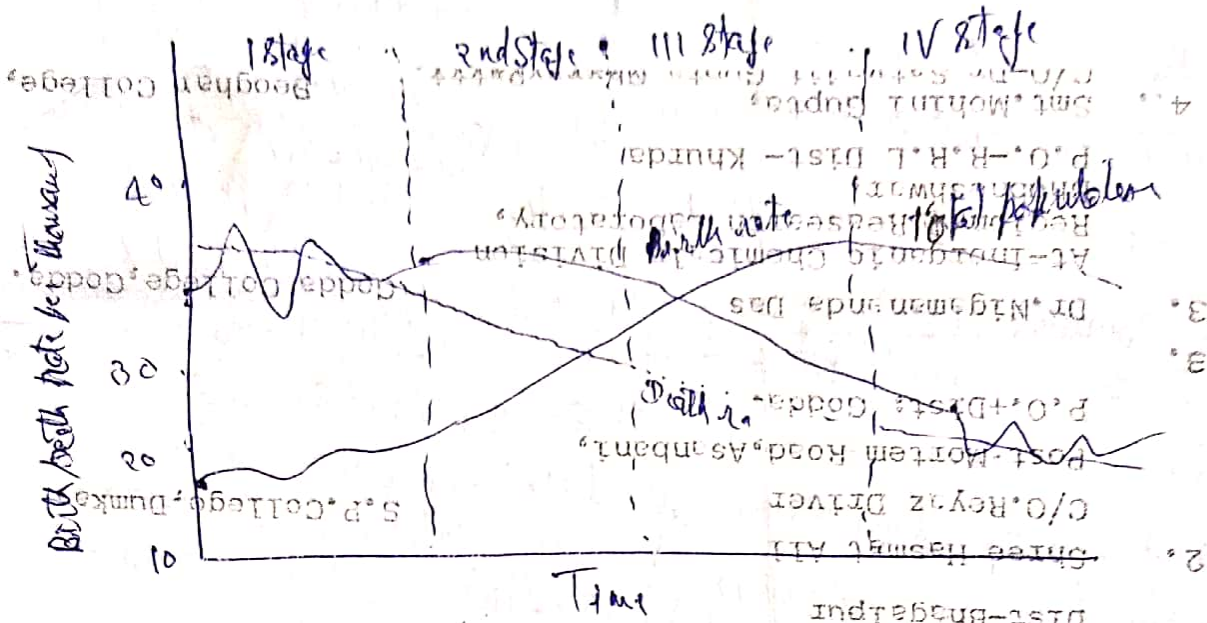
Landry (1909) was the first scholar who identified three distinct regimes

- (i) the Primitive (ii) the Intermediate and (iii) the modern
- (i) Stage of high growth rate - Fertility and mortality are very high and less controlled  
 Economy - Agrarian or pre-industrial, Population growth - Stationary, No family planning, religious faith & big family, famine, epidemic, war, flood, earthquake
- (ii) Decreasing growth rate - Fertility - high, Mortality - falling, Population growth - high  
 Economy - Mixed or early western or transition period, cautious about family planning
- (iii) Population decrease - Fertility - controlled (low to medium), Mortality - Low, Population growth - low to medium, Economy - urban, industrial & mixed, Post transition period, modern western incipient decline

Stages	0-14 Fertility	Mortality	Population Growth	Economy	Life Expectancy
i) High stationary stage UK before 1760	40% High birth rate 35 per thousand	High death rate 30 per thousand	Little stationary to low	Agrarian, pre-industrial, pre-transition	Low 30-40 4%
ii) Early expanding stage UK 1760-1880	40% High birth rate 35 per thousand	Declining birth rate 25-15 per thousand	Population explosion 2-3%	Mixed or early western, Primitives for long off	50 years 4%
iii) Late expanding stage China, Cuba UK 1880-1940	30-35% falling birth rate 25-20 per thousand	Highly decreasing death rate 20-15 per thousand	Still significant population growth 1-2% rapid expansion	Small family, emergence of economy, early family planning	50-70 years 4-8%
iv) Low stationary stage Canada, Spain, USA UK 1940	Declining birth rate 25% 10-20 per thousand	Low death rate 10 per thousand	Below 1% no change in pop.	Modern western urban & industrial	70-80 years 8-12%
v) Declining stage Hungary, Germany, France Eutrophication	Below 10	Below 10	Zero or decline	Age of high mass consumption उच्च सामंजस्य उद्योग (Rostow, 1971)	80 years High 12-15%

(i) Lechki & Wilkows - no prediction  
 (ii) not suitable for developing countries  
 (iii) Don't provide framework for the study of contemporary society

# Demographic Transition Theory



## Assumptions

1. The decline in mortality comes before the decline of fertility.
2. The fertility eventually declines to match mortality.
3. Social and economic transformation of the society takes place simultaneously with its demographic transformation.

किसी समाज का सामाजिक-आर्थिक परिवर्तन उसके जनसांख्यिकीय परिवर्तन के साथ-साथ होता है।

# Concept of Under Population (अल्प जनसंख्या की संकल्पना)

Increase in population growth leads to growth of population

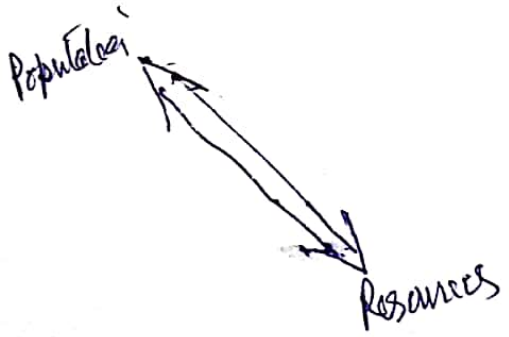
Underpopulation may exist where a population is too small to utilize fully its resources or where the resources could support a larger population without lowering living standards or increasing unemployment - J. Clark

अल्प जनसंख्या वहां मिलती है जहां संसाधन अधिक हैं व जनसंख्या कम है या जहां के संसाधन जनसंख्या के जीवन स्तर को कम व बेरोजगारी को बढ़ा न करके (इस) को अधिक जनसंख्या को भरना योग्य की क्षमता रखती है।

- (A) Absolute Under population - Russia
- (B) Relative Under population - New world

## Problems

1. Uneven distribution of population
2. Remoteness
3. Underutilization of resources
4. Slow growth of industry
5. climatic problems



Concept of Over Population (अति जनसंख्या या जनसंख्या की अत्यधिकता)

Over population may take place when resource development does not go hand in hand with population growth and when growth of tertiary services lags behind technological progress - J.J. Clark

जनसंख्या की अत्यधिकता तब उत्पन्न होती है जब जनसंख्या की वृद्धि की अपेक्षा संसाधनों का विकास कम होता है तथा तृतीयक सेवाओं में तकनीकी विकास के न हो पाने के कारण।

जब किसी क्षेत्र के प्राकृतिक संसाधनों के विकास की तुलना में वहाँ जनसंख्या वृद्धि की गति तेज होती है जिससे जन-उद्योग क्षेत्र की सामान्य पोषण क्षमता से अधिक हो जाती है और जीवन स्तर नीचे गिरने लगता है।

(A) Absolute Over population - संसाधनों का विकास अधिकतर विरत हो जाता है और विकास की गति अवरूढ़ हो जाती है किन्तु जनसंख्या की वृद्धि जारी रहती है।  
- ग्रेट ब्रिटेन

(B) Relative Over population - Resources are not utilised but there is probability of population explosion  
- developing countries - population explosion

(i) Rural Over population - unemployment, poverty & low standard of living  
unequal distribution of land, p.d., traditional method of agriculture

(ii) Industrial over population - excess working population, industrial sickness

Problems

1. Rapid population growth
2. Unemployment
3. Housing & Health
4. Under-utilization of agricultural lands.
5. Slow growth of industry
6. Traditional attitudes.
7. Low life expectancy
8. Low per capita income

