

# Human Population and the Environment

- In 1800 the Earth was home to about one billion people.
- It took---
- 39 thousand years----1 billion
- Next 130 years-----2 billion
- Next 45 years-----4 billion
- Very few years-----8 billion
- It will be 11 billion by 2045

# Reasons of the growth of human Population-----

- During the Stone Age people lived in a hostile environment. Draughts and outbreak of diseases used to be quite common leading to mass death.
- The 14<sup>th</sup> Century A.D. experienced large scale mortality due to Plague when about 50% of people in Asia and Europe died due to the diseases.

# Population Characteristics and variations among nations.

- Exponential Growth—When quantity increases by a constant amount per unit time e.g. 1,3,5,7,etc it is called Linear Growth.
- But When it increases by a fixed percentage it is called as Exponential Growth e.g. 2,4,8,16,32 etc.

# Doubling time (Td)

- The time needed for a population to double in its size at a constant annual rate is known as Doubling Time.
- $Td = 70/r$
- Td = Doubling time in years
- R = Annual growth rate
- If a nation has 2% annual growth rate its double in 35 years.

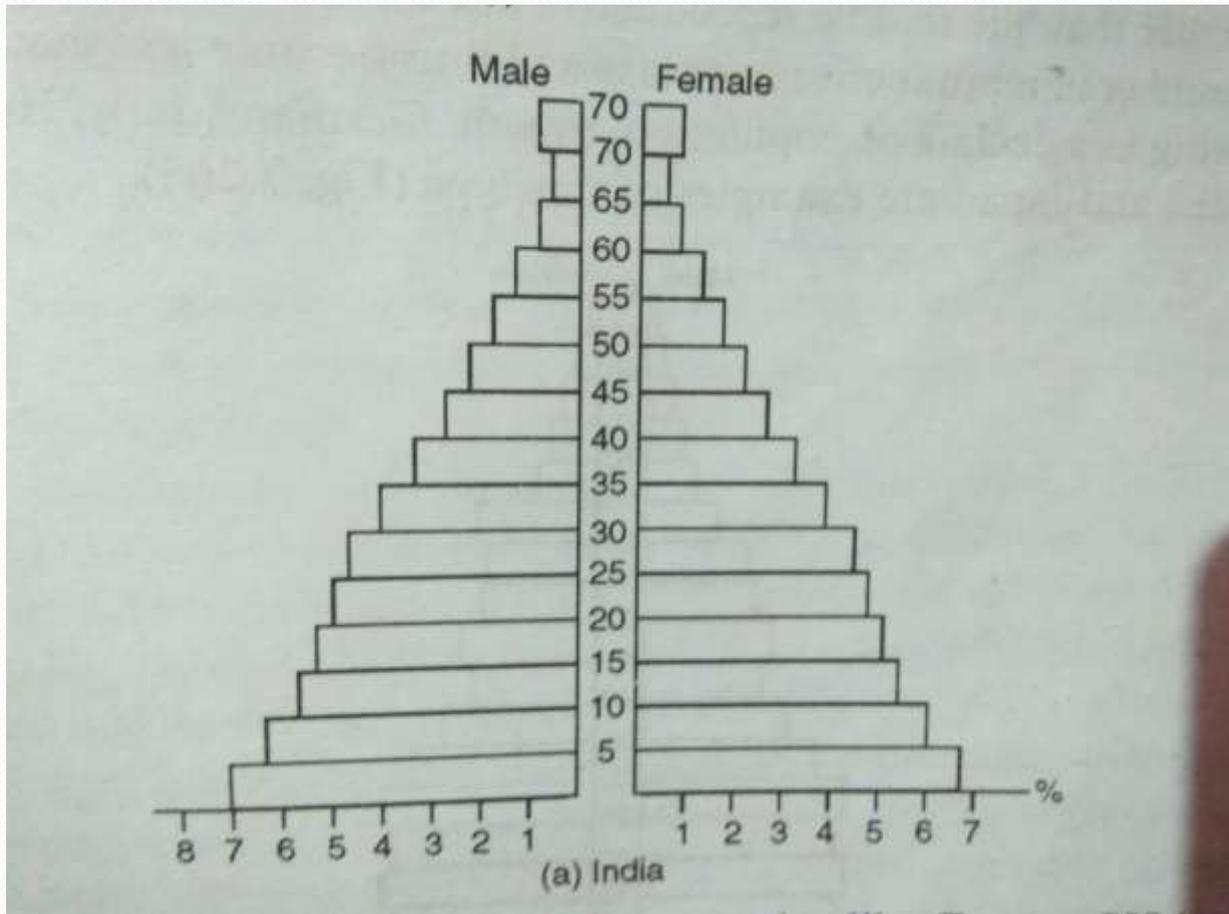
# TFR (Total Fertility Rate)

- It is a key measure of a nation's population growth.
- TFR is defined as the average number of children that would be born to women in her life time.
- 1.9---in developed countries
- 4.7---in developing countries
- 6.1----- ( in 1950 world wide)
- Now due to changes in cultural and technological set-up of societies and Government policies TFR has come down. It is a blessing for whole human nations of the World.

# Age Structure

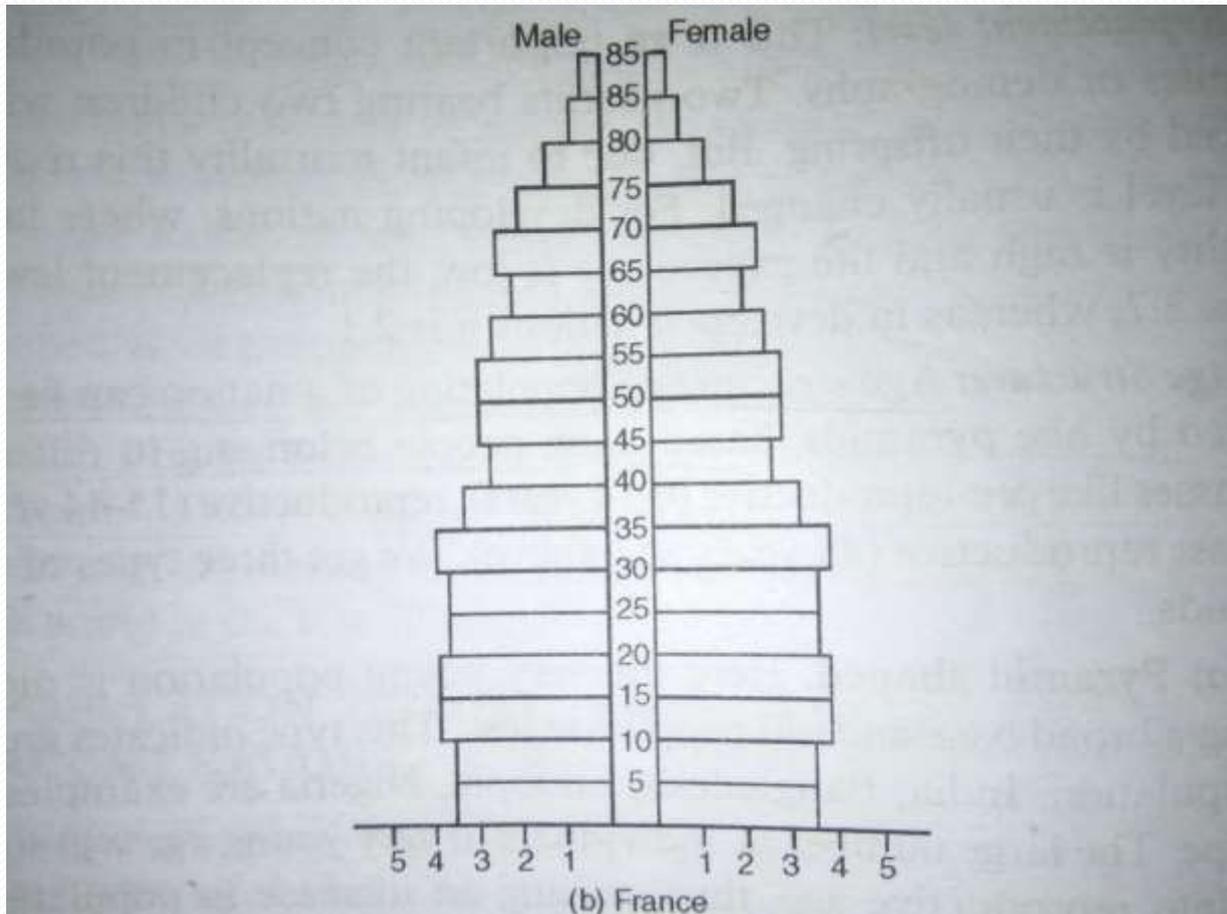
- Age structure of population of a nation can be represented by age pyramids. It is based upon people belonging to different age classes like-----
- Pre-Productive (0---14 years)
- Re-Productive (15-44 years)
- Post-Productive (45 and above)
- There are three types of age pyramids.

# Pyramid Shape



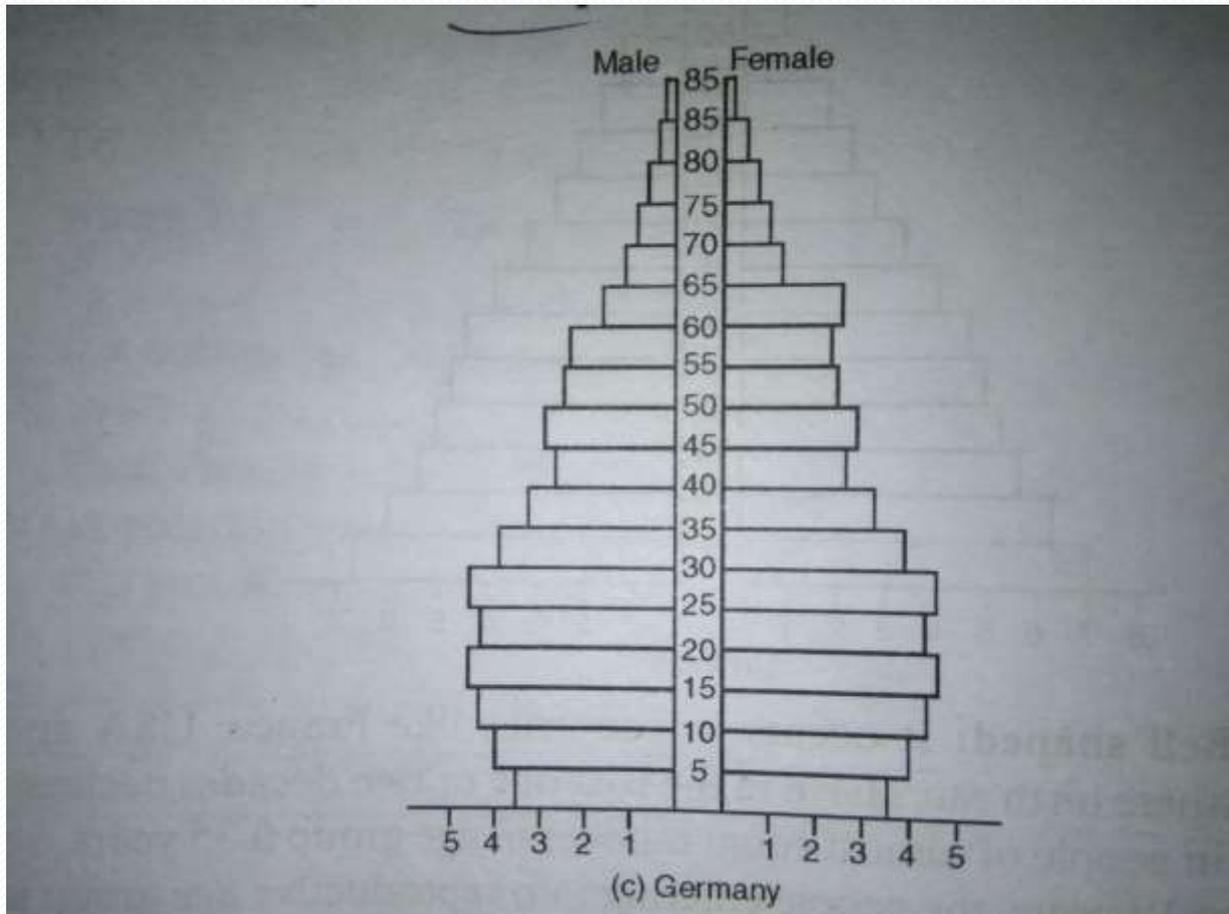
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- In India, Bangladesh, Ethiopia, Nigeria this pyramid shape of Population is shown.
  - The large number of individuals in very young age will soon enter into reproductive age and causing increase in population in old age indicate less loss of population due to death.

# Bell Shaped



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- It occurs in France, USA and Canada.
  - From 0—35 years the population size remains same due to the decline in birth rate.
  - In the next 10 years people entering into re-productive age group is not going to change.

# Urn Shape



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- It occurs in Germany, Italy, Hungary.
  - Young class is smaller than re-productive age of class

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- SOURCE---UN DEMOGRAPHY YEAR BOOK, 200

**Pollution in the  
river**



**Over population**



# Environmental Effects of Overpopulation



## Deforestation



## Effects of overpopulation



## Marine pollution





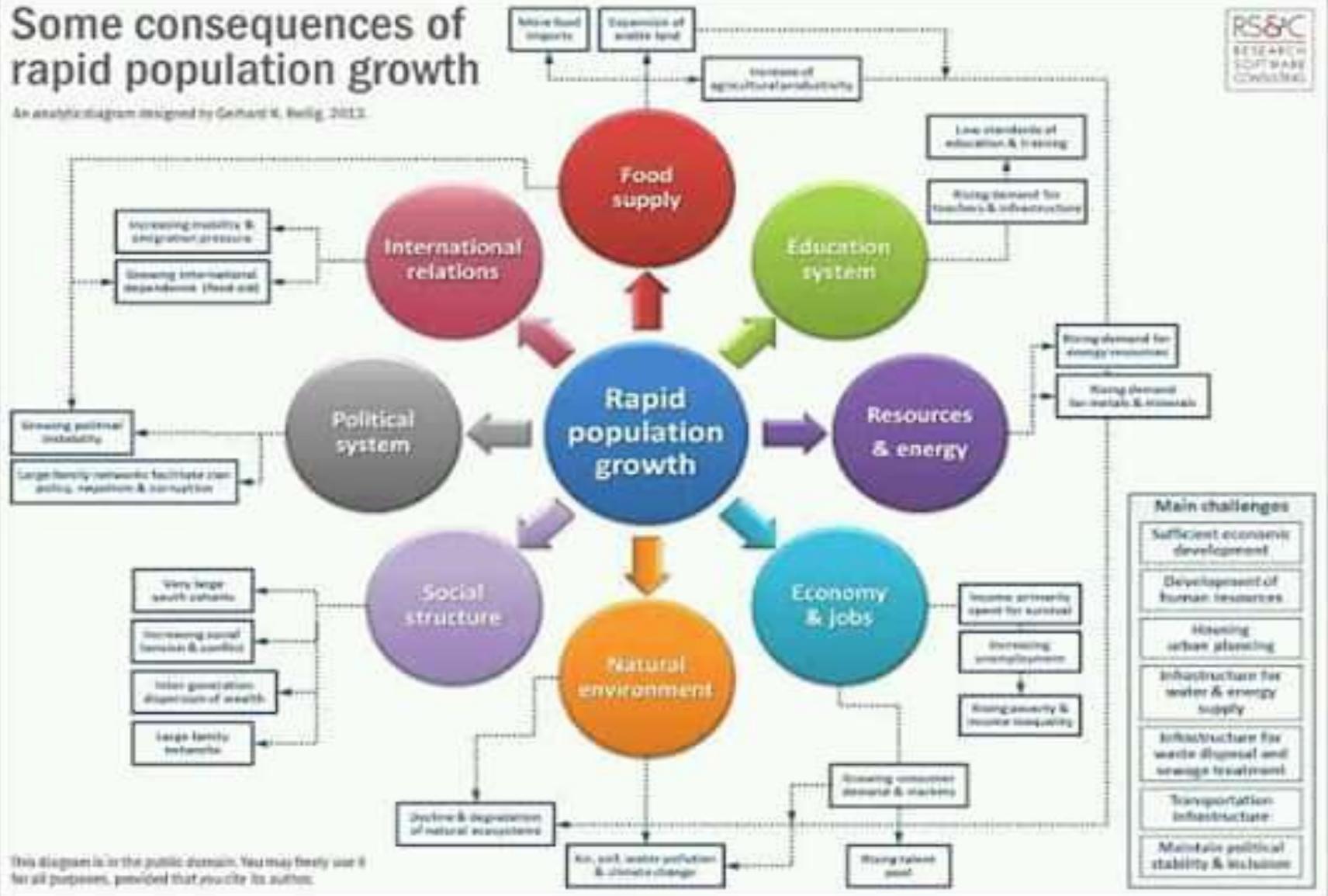


# Over population



# Some consequences of rapid population growth

An analytical diagram designed by Gerhard K. Heilig, 2012.



# OVERPOPULATION



# THANK YOU

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