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Group No.: 195-B

Topic : Ecological characteristics of population of Europe

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Population Density

- **Population density** (in agriculture : standing stock and standing crop) is a measurement of **population** per unit area or unit volume; it is a quantity of type number **density**. It is frequently applied to living organisms, and particularly to humans. It is a key geographic term.

$$\text{Population density} = \frac{\text{total population}}{\text{total land area}}$$

Population Density of Europe

- The current population of Europe is 747,608,577
- The total land area is 22,134,900 Km2 (8,546,329 sq. miles)
- The population density in Europe is 34 per Km2 (87 people per mi2).

POPULATION GROWTH

- The population growth rate is the rate at which the number of individuals in a population increases in a given time period as a fraction of the initial population. Global human population growth amounts to around 75 million annually, or 1.1% per year.

$$r = \frac{\log(P_{t+n}/P_t)}{n * \log_e} * 100$$

Where,

- r = annual rate of population growth
- P_{t+n} = population in the current census
- P_{t-1} = population in a prior census period
- n = number of years between censuses, P_{t+n} and P_t
- e = the natural logarithm, value of approx. 2.718

POPULATION GROWTH OF EUROPE

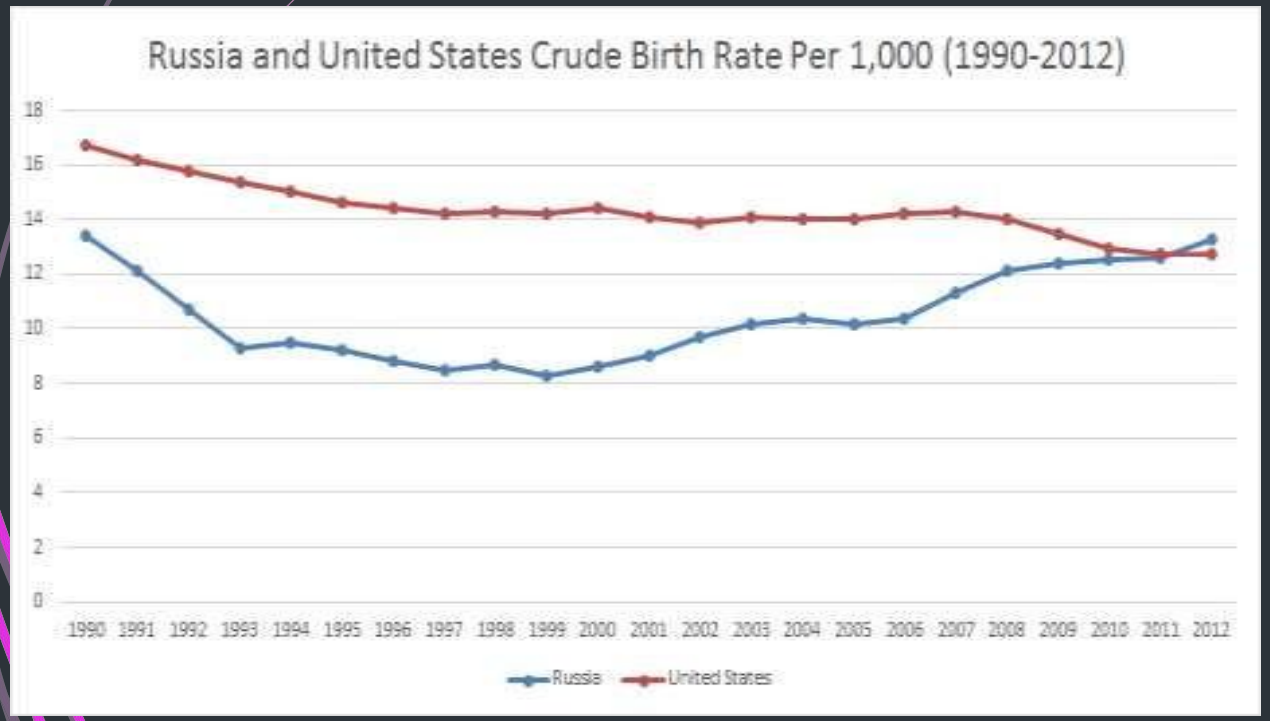
Its population is estimated at 738 million, which accounts for 11% of the world's population.

The continent is currently growing at a rate of 0.3%.

Europe has been in a decline for some time and its population is aging rapidly in most countries.

BIRTH RATE OR NATALITY

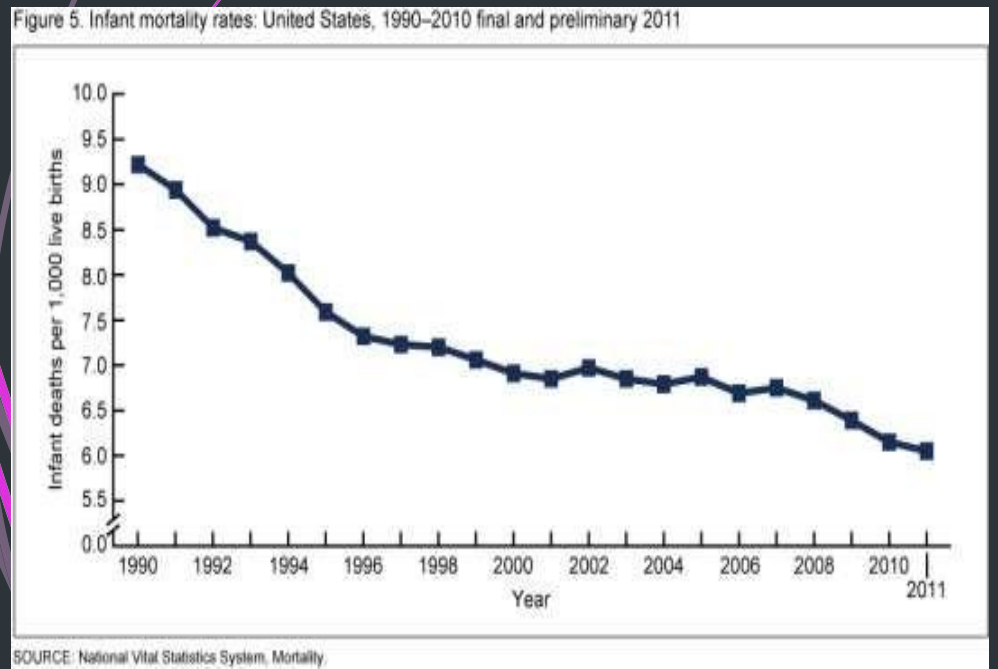
- The **birth rate** (technically, **births**/population **rate**) is the total number of live **births** per 1,000 of a population in a year.



$$\text{Birth Rate} = \frac{\text{Number of Births}}{\text{Annual Average Population}} \times 1000‰$$

DEATH RATE OR MORTALITY

- **Mortality rate** or **death rate**, is a measure of the number of **deaths** (in general, or due to a specific cause) in a particular population, scaled to the size of that population, per unit of time.



$$\text{Death Rate} = \frac{\text{Number of Deaths}}{\text{Annual Average Population}} \times 1000‰$$

Life Expectancy in Europe

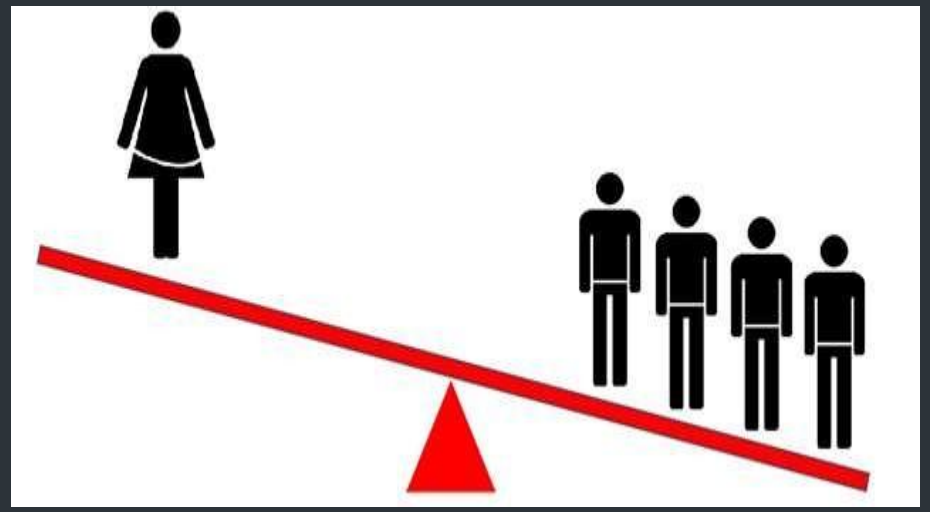
- BOTH SEXES
  79.1 years
  (life expectancy at birth, both sexes combined)
- FEMALES
  82.3 years
  (life expectancy at birth, females)
- MALES
  75.9 years
  (life expectancy at birth, males)

Infant Mortality Rate and Deaths of Children under 5 Years Old in Europe

- INFANT MORTALITY :
  3.4
  (infant deaths per 1,000 live births)
- DEATHS UNDER AGE 5 :
  4.2
  (per 1,000 live births)

GENDER RATIO

- The **gender ratio** is the **ratio** of males to females in a population. In the majority of species, this is 1:1, the reasons for which are described in Fisher's principle. Some eusocial wasps, such as the Polistes fuscatus and the Polistes exclamans, seem to defy this **ratio** at times.

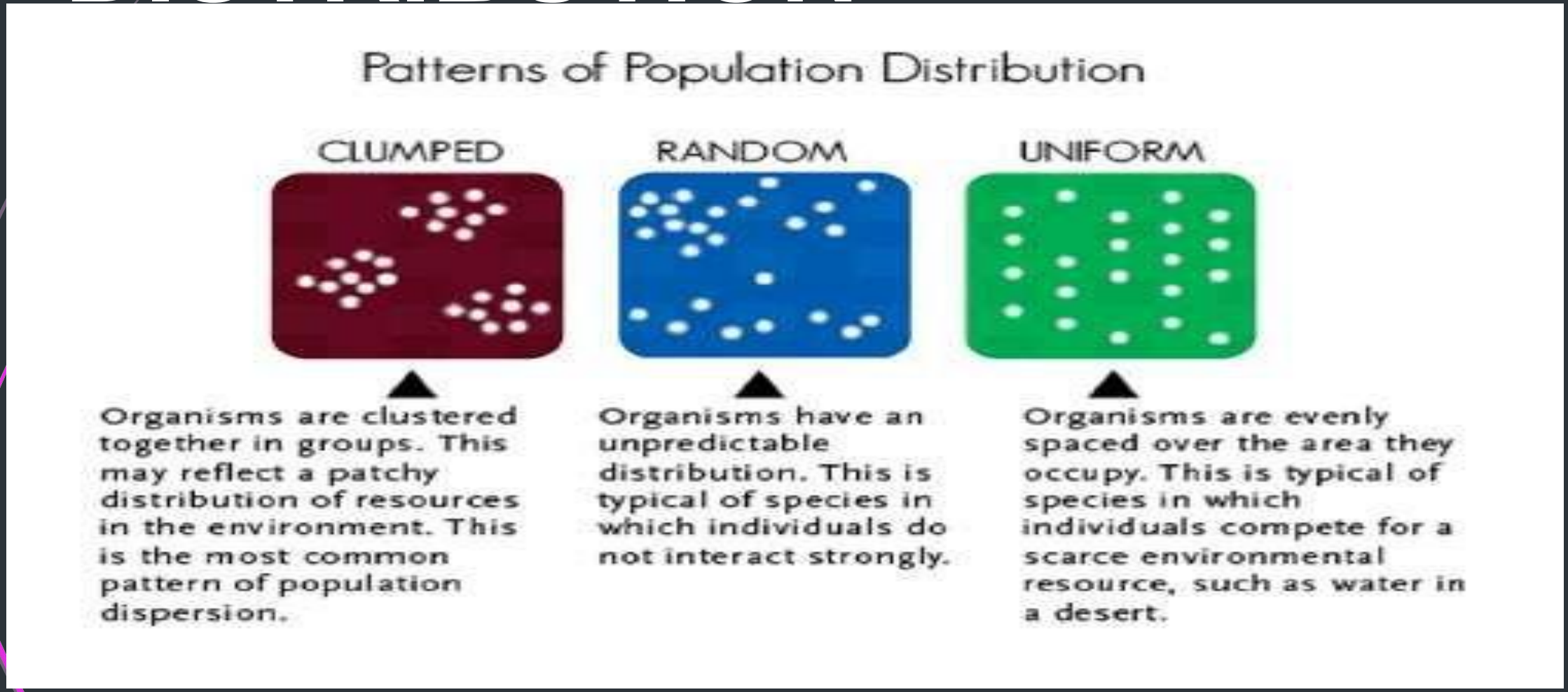


$$\text{Sex ratio} = \frac{\text{population}_{\text{males}}}{\text{population}_{\text{females}}} * 100$$

Fertility in Europe

- Total Fertility Rate (TFR) of 2.1 represents the Replacement-Level Fertility: the average number of children per woman needed for each generation to exactly replace itself without needing international immigration.
- A value below 2.1 will cause the native population to decline

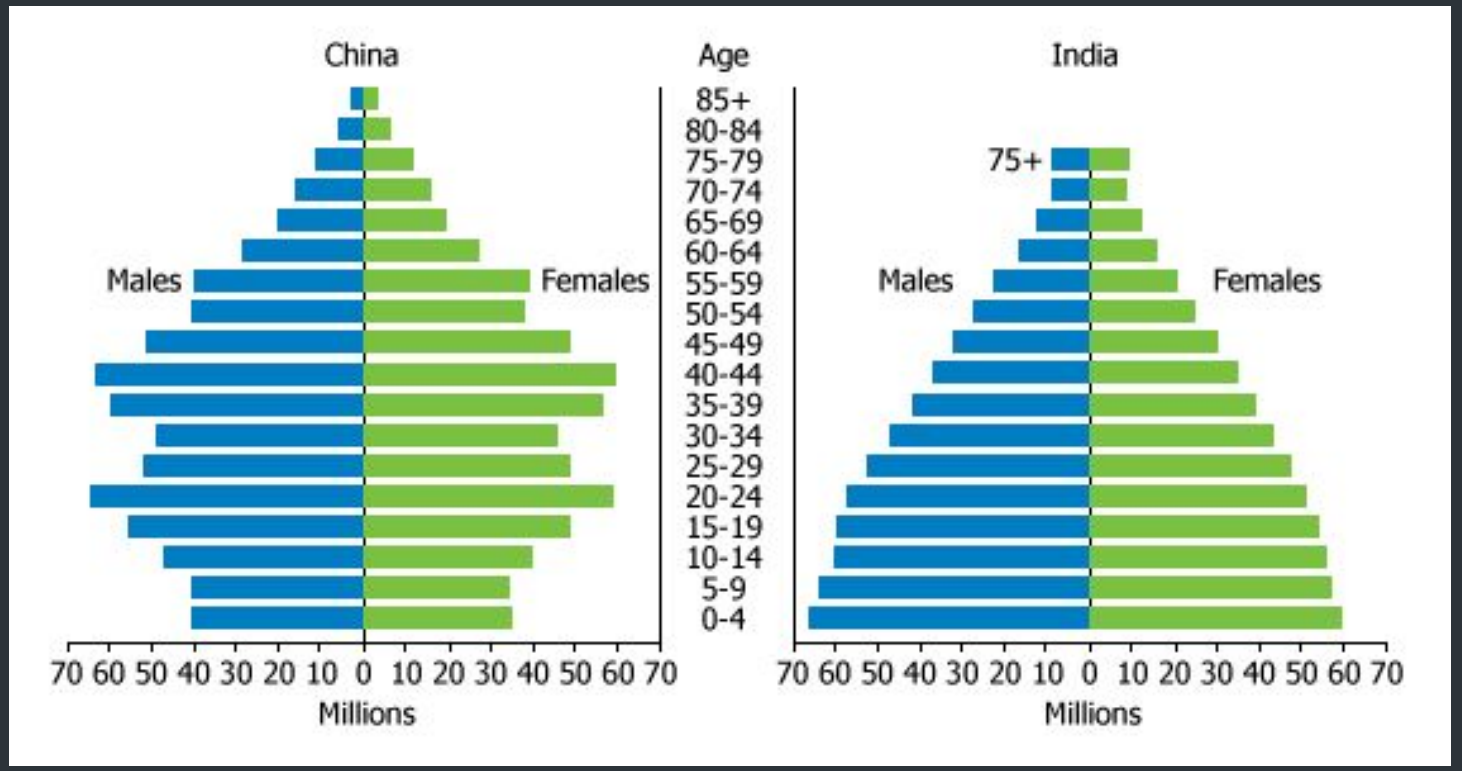
PATTERN OF DISTRIBUTION



AGE DISTRIBUTION

- There are three types of age distribution methods:
  - Pyramid Shaped
  - Bell Shaped
  - Urn Shaped

Pyramid shaped



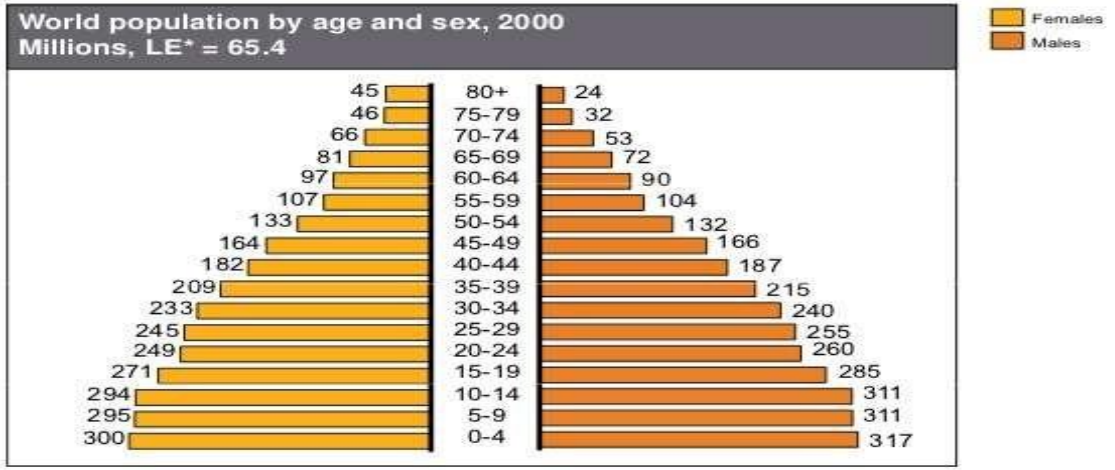
Pyramid Shaped Age Distribution of Population of China and India

Bell Shaped

Bell Shaped Age Distribution of Population

Urn Shaped

5 Today's 'pyramid-shaped' population profile will become 'urn-shaped' by 2050



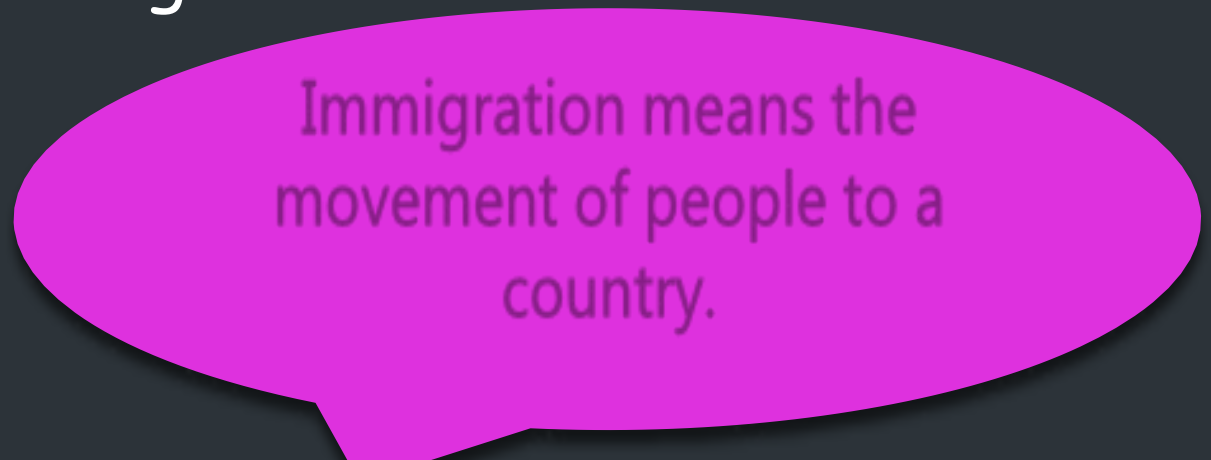
* LE = Life Expectancy

Source: UN, World Population Prospects: The 2002 Revision and World Urbanization Prospects: The 2001 Revision

NOVARTIS

Immigration

- Immigration is the movement of people into a destination country to which they are not native or do not possess its citizenship in order to settle or reside there, especially as permanent residents or naturalized citizens, or to take-up employment as a migrant worker or temporarily as a foreign worker.



Emigration

- Emigration is the act of leaving one's native country with the intent to settle elsewhere. Conversely, immigration describes the movement of persons into one country from another. Both are acts of migration across national boundaries.

Emigration means movement of people from a country.

Positive/Negative Growth Rate

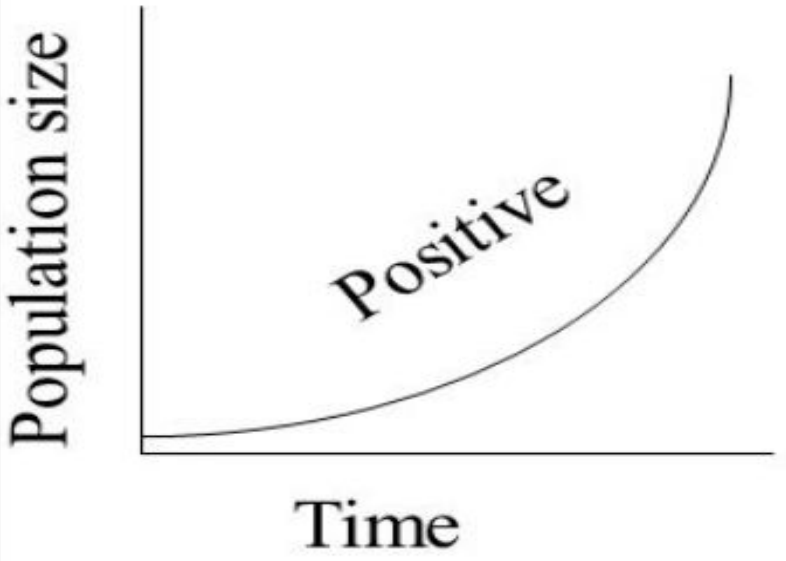
- A **Positive** growth rate indicates that the population is increasing
- **Negative** growth rate indicates that the population is decreasing.

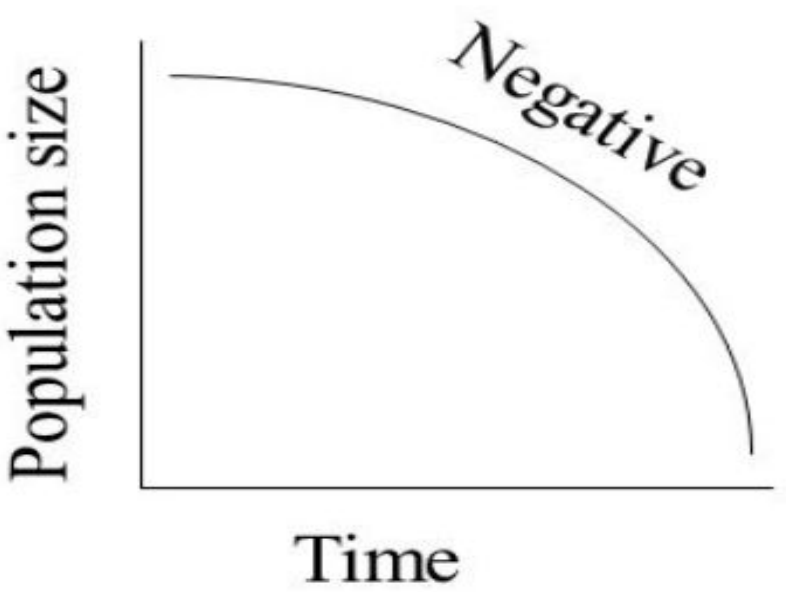
Zero Growth

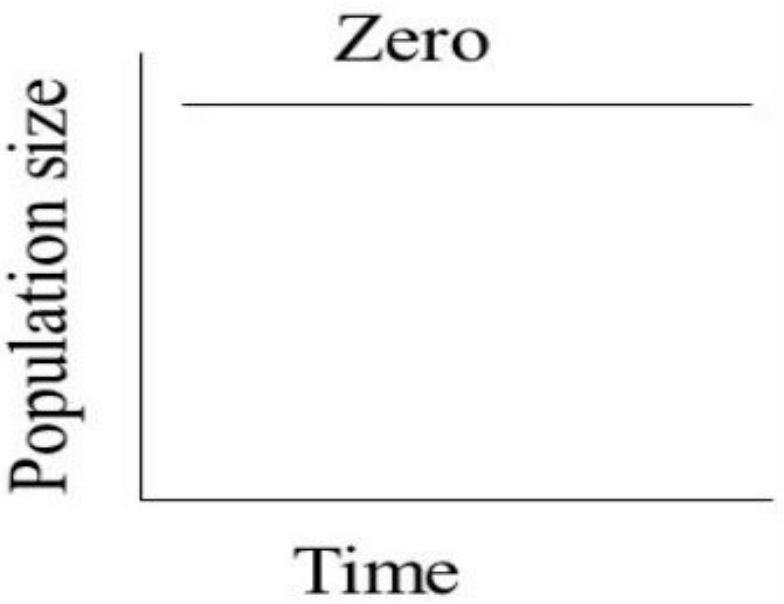
- Zero population growth, sometimes abbreviated ZPG (also called the replacement level of fertility), is a condition of demographic balance where the number of people in a specified population neither grows nor declines, considered as a social aim by some.
- According to some, zero population growth is the ideal towards which countries and the whole world should aspire in the interests of accomplishing long-term environmental sustainability.
- What it means by 'the number of people neither grows nor declines' is that births plus in-migrants equal deaths plus out-migrants.

Growth Rate

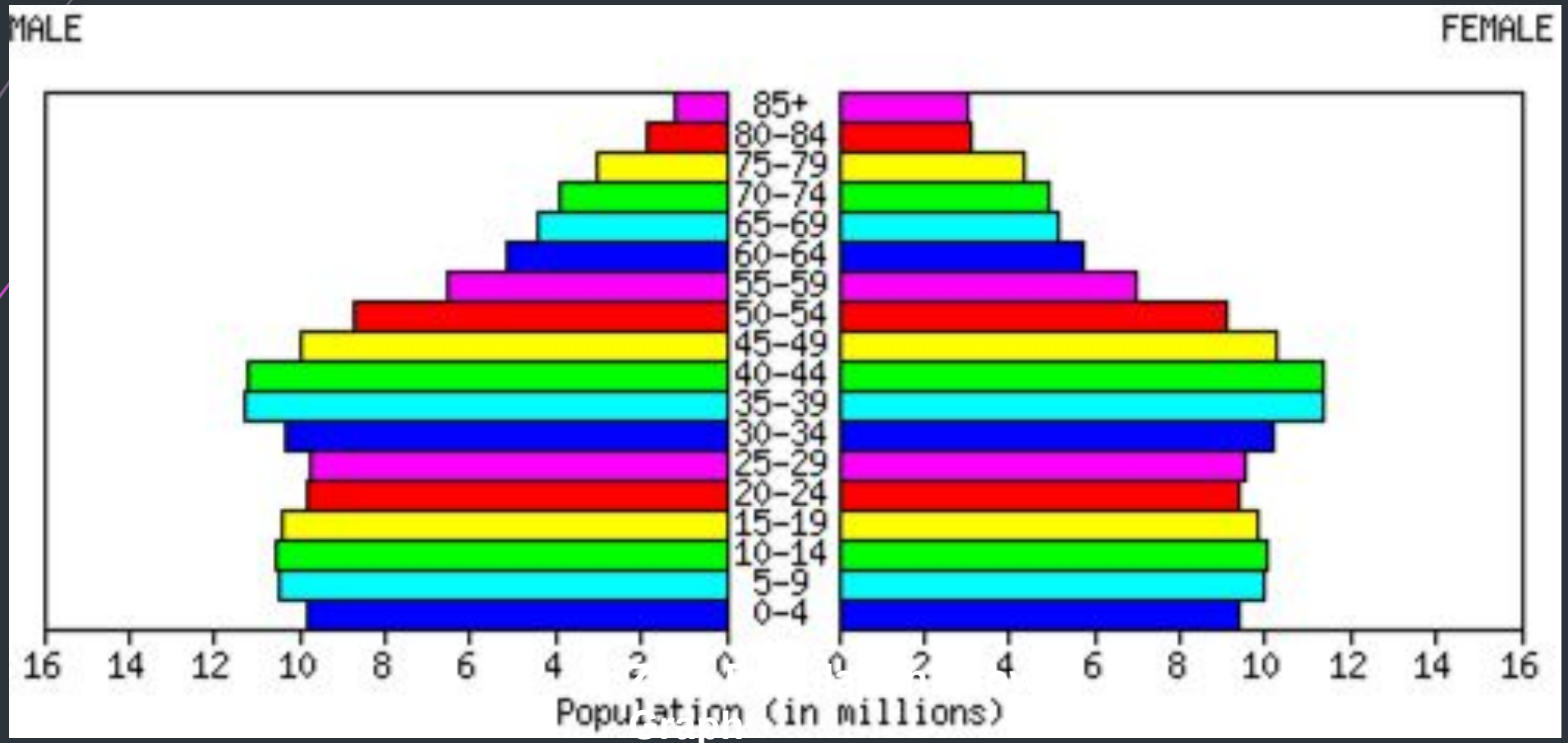
- Change in population size over time
- Positive growth rate- population is increasing
- Negative growth rate- population is decreasing
- Zero growth rate- population size is not changing

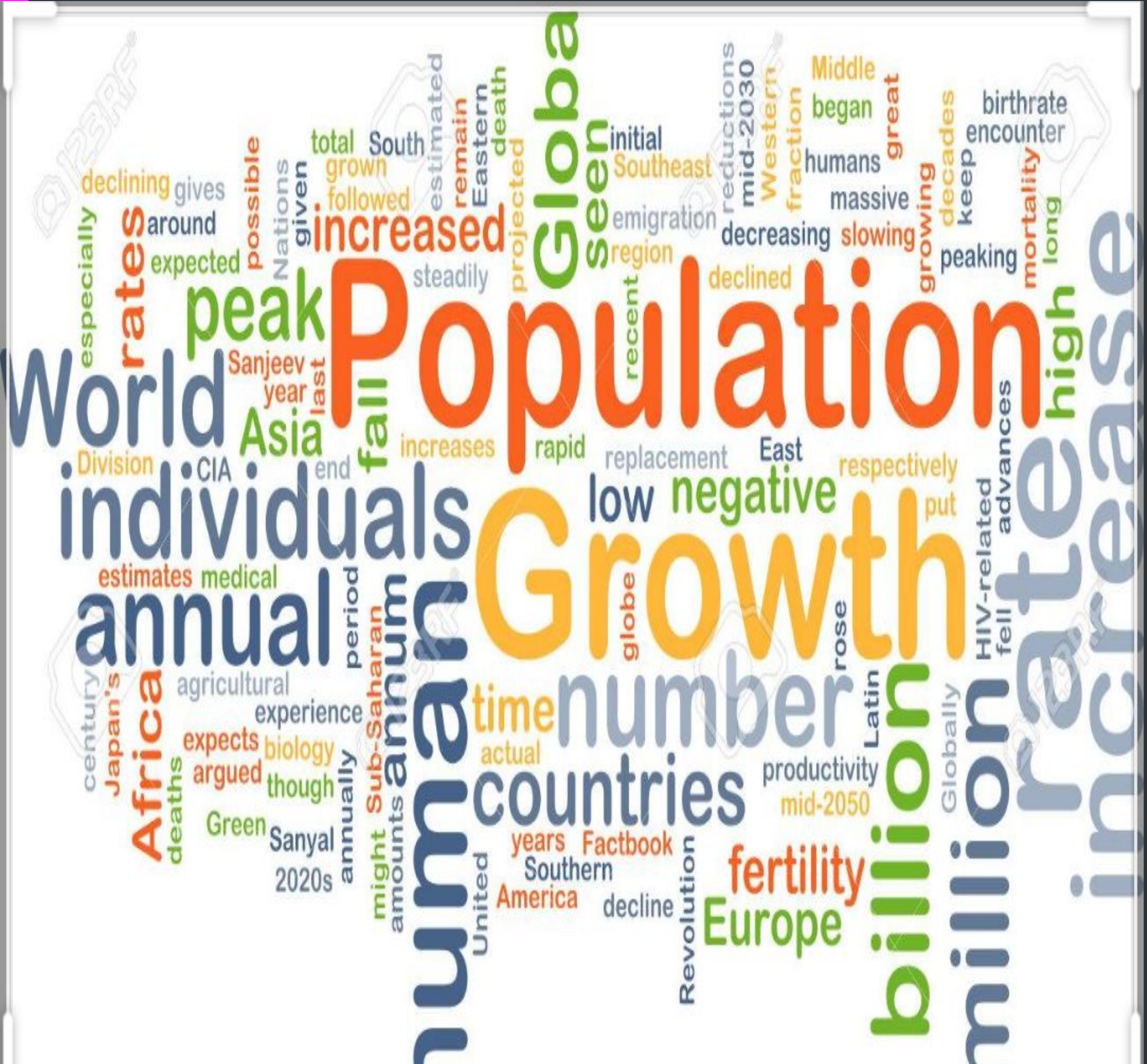






Zero Population Growth




Population
Growth
World
individuals
annual
number
countries
rate
increase
billion
million
Global
peak
increased
seen
Asia
fall
rates
declining
gives
around
expected
especially
possible
Nations
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Eastern
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projected
steadily
initial
Southeast
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region
reductions
mid-2030
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slowing
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growing
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THANK YOU