

Demography

Objectives

- Defining demography
- What forces are affecting the demography of a population
- For a country status to be changed from developing to a developed country; What are the stages it has to pass through?

Definition of demography

- Is the scientific study of a human population.
- It focuses on three phenomenon:
 - Changes in population size.
 - The composition of the population
 - The distribution of the population

Demographic forces

(determinants of population change)

- Mortality
- Fertility
- Migration

Mortality rate

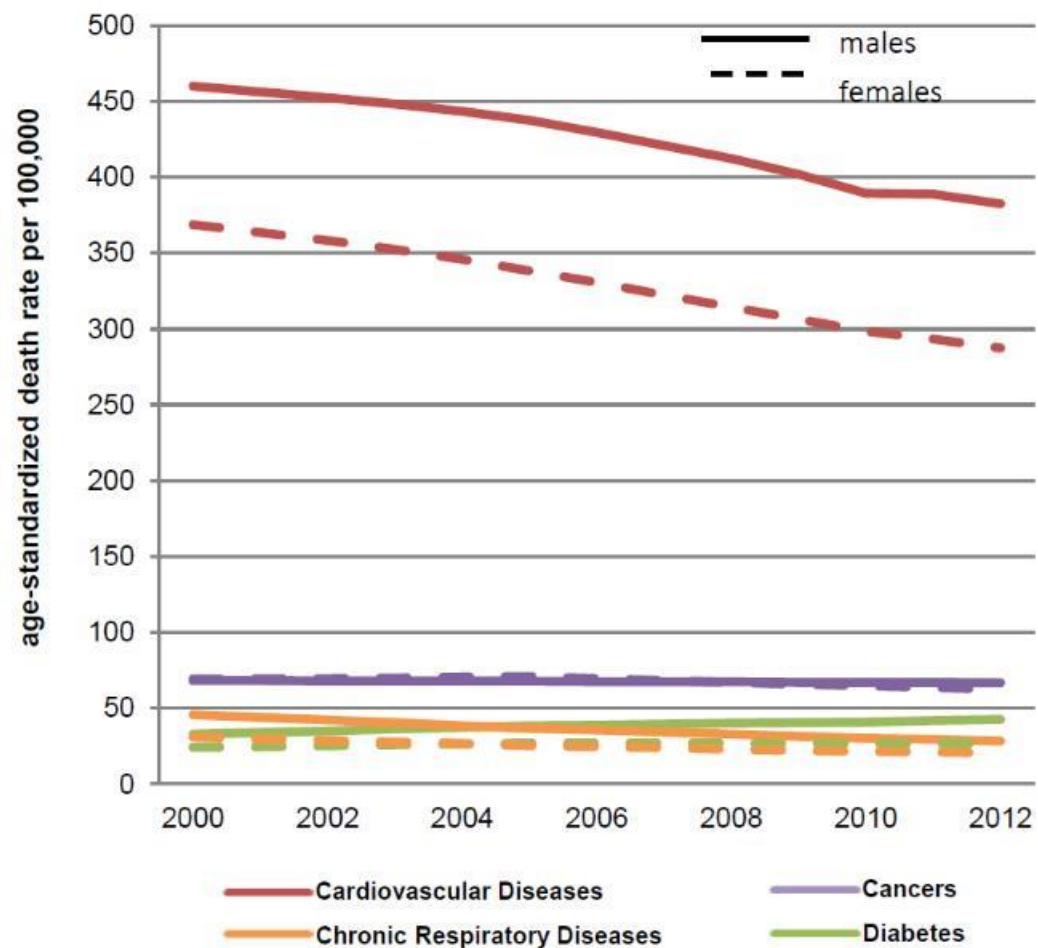
- is the number of deaths in a particular population per unit of time.
- Average risk of dying of a person in the group during a span of time.

Saudi Arabia

Total population: 28 288 000

Income Group: High

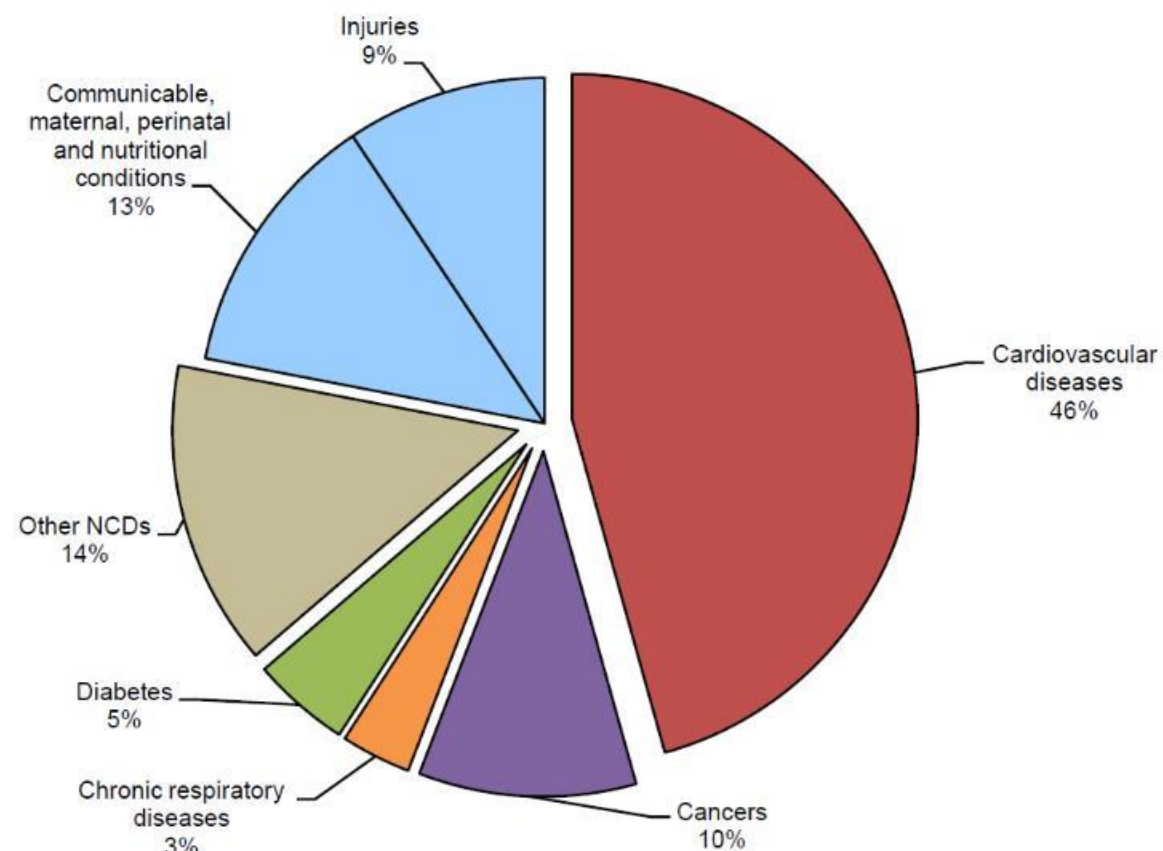
Age-standardized death rates*



Percentage of population living in urban areas: 82.3%

Population proportion between ages 30 and 70 years: 42.7%

Proportional mortality (% of total deaths, all ages, both sexes)*



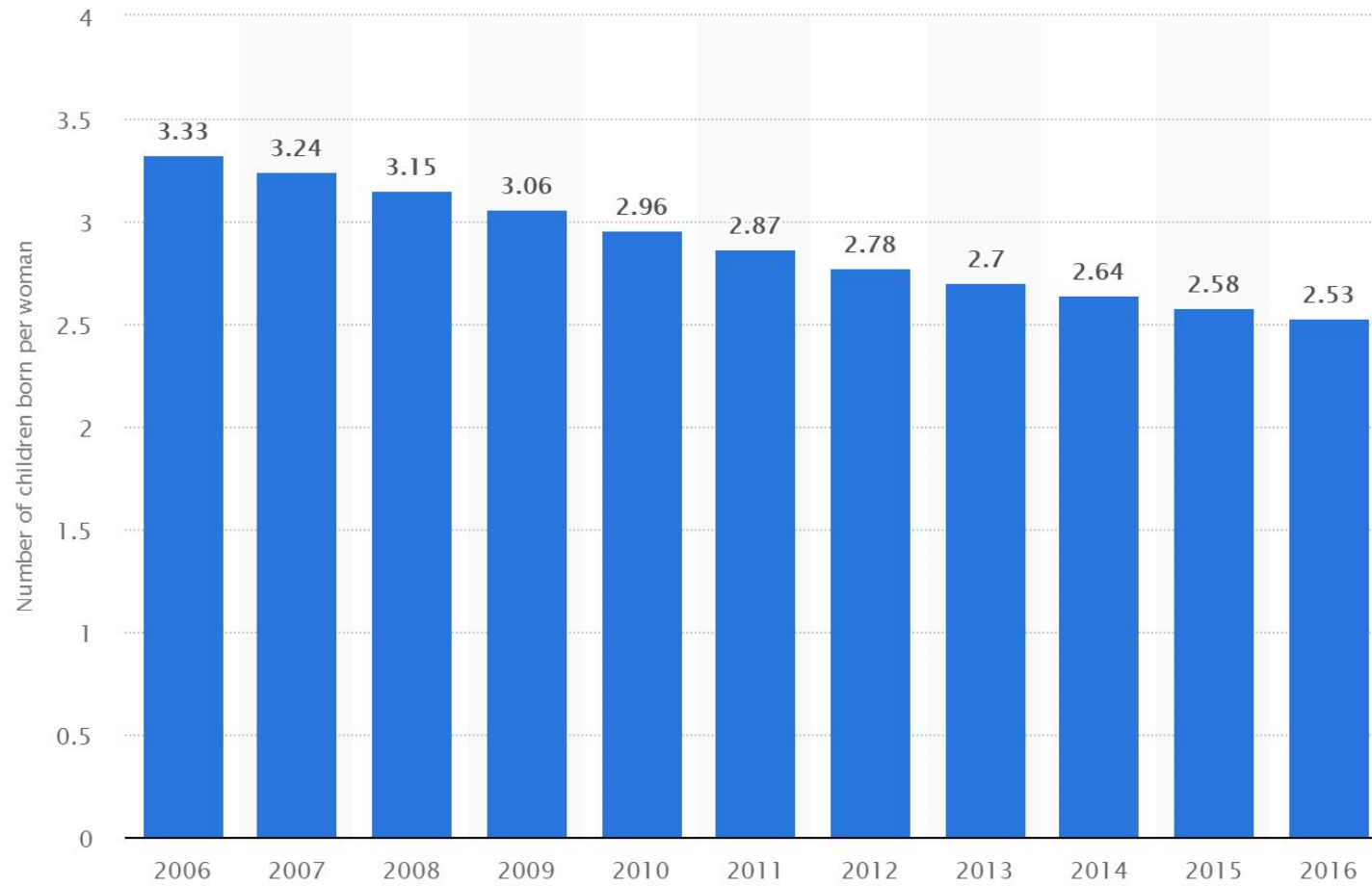
Total deaths: 90,000

NCDs are estimated to account for 78% of total deaths.

Fertility rate

- It is the average number of children born to women during their reproductive years.
- For the population in a given area to remain stable, an overall total fertility rate of 2.1 is needed, assuming no immigration or emigration occurs.

Saudi Arabia: Fertility rate from 2006 to 2016



Examples

- <http://worldpopulationreview.com/countries/birth-rate-by-country/>
- <http://worldpopulationreview.com/countries/death-rate-by-country/>
- <http://worldpopulationreview.com/countries/saudi-arabia-population/>

Demographic cycle

- Also known as demographic transition
- Some countries have passed through high fertility and high mortality conditions to a low fertility and low mortality conditions, both aiming at low growth of population. These two conditions have been referred to as the “old and new balance” with an in between period of imbalance.

Demographic cycle

- FIRST STAGE

- It is high stationary stage, characterized by balance of high birth rate and high death rate
- Pre Modern times. It was true for all human populations up until the late 18th. C. when the balance was broken in western Europe.

Demographic cycle

- SECOND STAGE (Early expanding)
 - Death rate < Birth rate (unchanged or increased in some)
 - The decline in death rate started to be observed in Europe in the late 18th C.
 - Many country in South Asia and Africa in this stage

Demographic cycle

- **THIRD STAGE (Late expanding)**
 - The death rate declines further and the birth rate tends to fall
 - e.g. India, China, Singapore

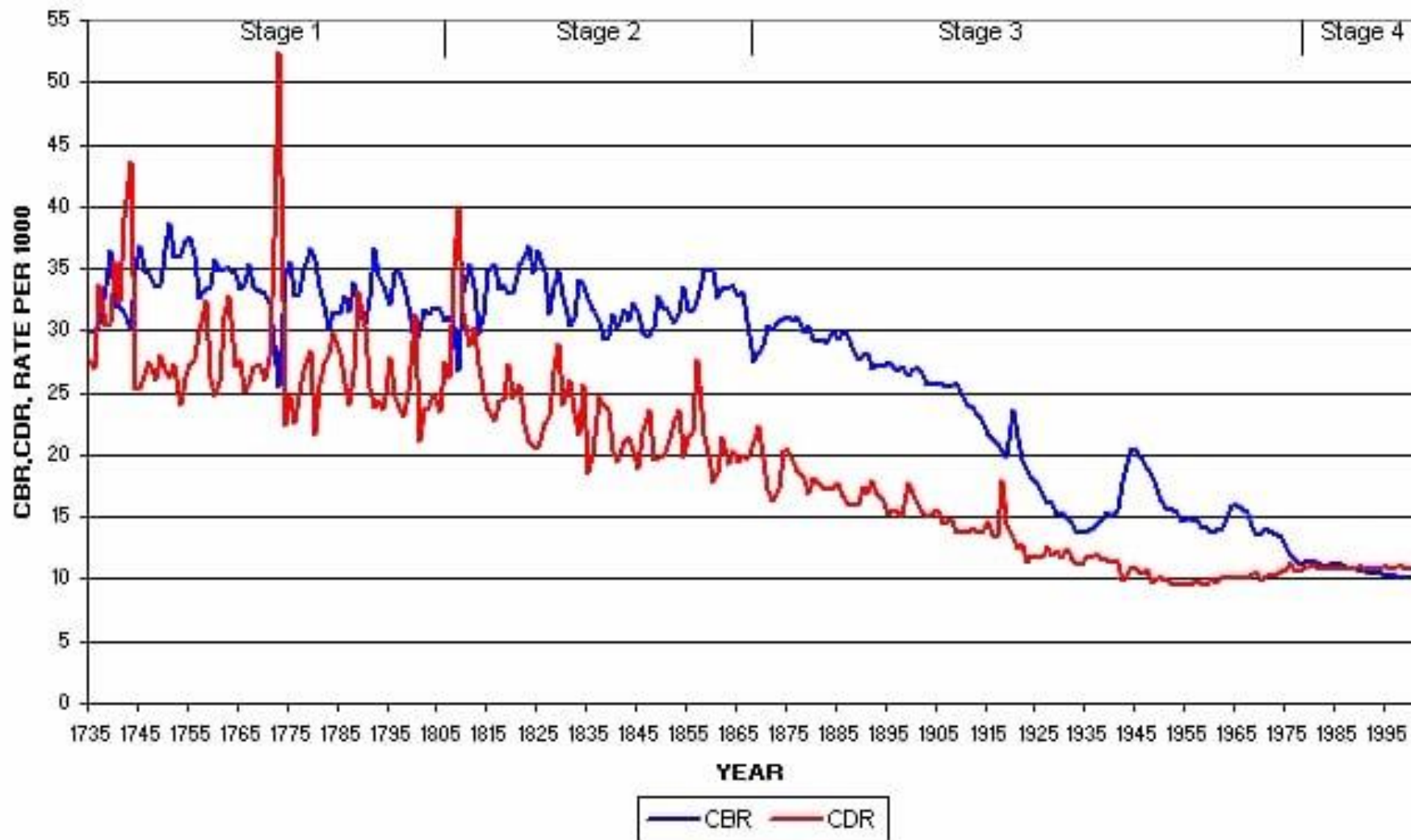
Demographic cycle

- **FOURTH STAGE (Low stationary)**
 - Low birth rate and low death rate
 - Zero population growth or close to zero
 - Most industrialized countries

Demographic cycle

- FIFTH STAGE (Declining)
 - Population starts to shrink because birth rate is declining further and becoming lower than death rate
 - e.g. East Europe
- <http://worldpopulationreview.com/>

DEMOGRAPHIC CHANGE, SWEDEN, 1735-2000



Relation between growth rate and population

Rating	Annual rate of growth %	# of years required for the population to double in size
Stationary population	No growth	
Slow growth	Less than 0.5	More than 139
Moderate growth	0.5 to 1.0	139 - 70
Rapid growth	1.0 to 1.5	70 - 47
Very rapid growth	1.5 to 2.0	47 - 35
“Explosive growth”	2.0 to 2.5	35 - 28
	2.5 to 3.0	28 - 23
	3.0 to 3.5	23 - 20
	3.5 to 4.0	20 - 18

Population Growth

(Population Growth = Natural Increase + Net Migration)

- The equation can also be expressed in terms of rates. (by dividing each element by the mid year population expressed per 1000).
- Population Growth rate however is usually expressed in percentage which helps us calculate the rate at which the population of a country or a community is growing.
- The principle of compound growth rate is applied to calculate the effects of population growth rate on future population.

Population Growth

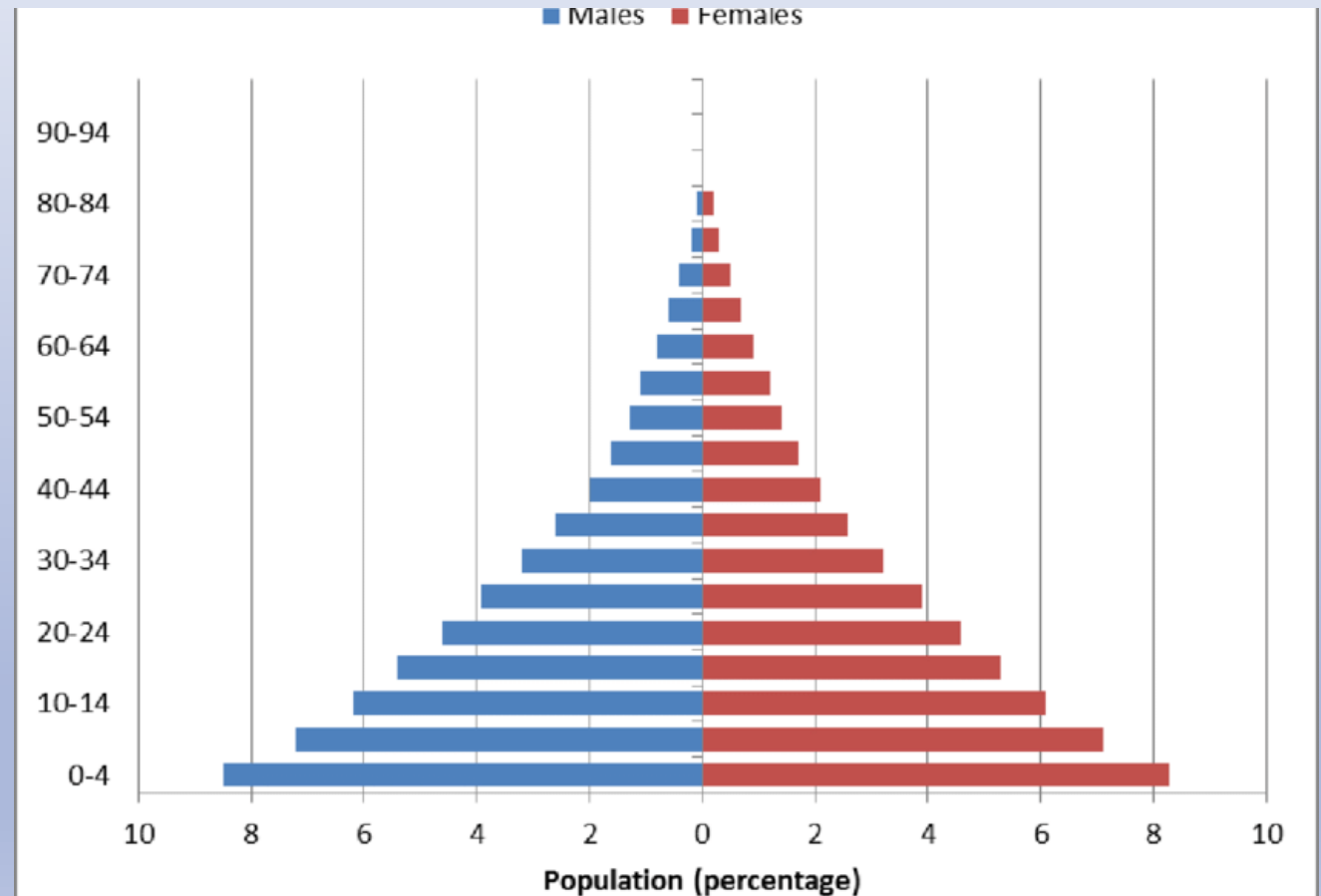
- A population growing at the rate of 01 % per year, How many years it will take for this population to double?
 1. 100 years
 2. 70 years
 3. 50 years
- It is estimated that the Saudi Population in 2018 is around 33.55 million. How long it will take for this population to double at growth rate of 1.87% per year?

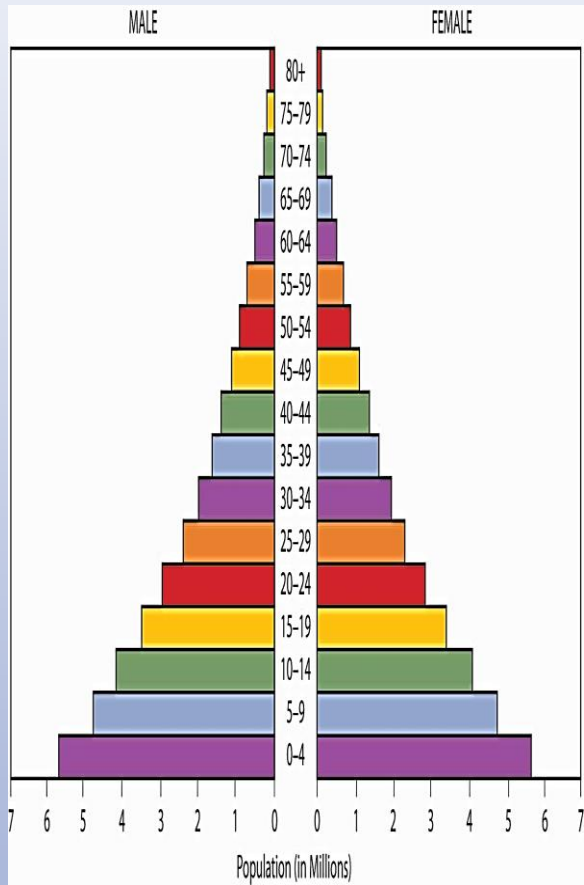
Population Pyramids

- Objectives:
 - Definition
 - How to read a population pyramid
 - Knowing the different shapes of population pyramids
 - Importance of population pyramids

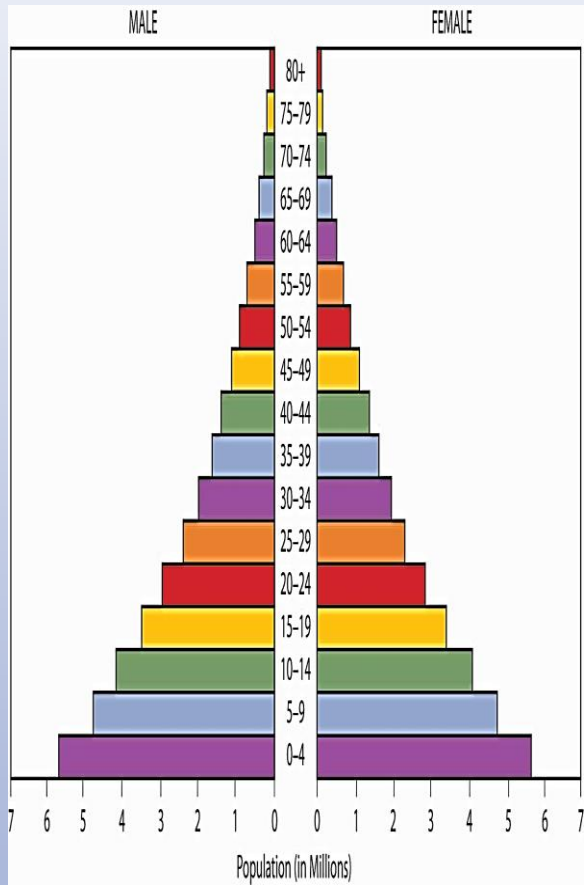
Population Pyramid

- Is a graphical illustration that shows the distribution of various age groups by sex in a population.





- Halves
 - Males : Females
- Base
 - Births; population adding to itself
 - Wide base reflects high births
 - Narrow base reflects low births
- Apex
 - Oldest people; reflects those living old age
 - Tapering apex reflects few living to old age
 - Broad apex reflects many living to old age
- Height
 - Life span; increase height reflects increase life span
- Side
 - Change in population size due to death or migration



- Less than 15

- Represents the size of dependent youth < 15
- Large size in rapidly growing population
- Small size in slowly growing population

- 60 + years

- Represents the size of dependent old ≥ 60
- Large size in population with longer life span
- Small size in population with short life span

- Median age

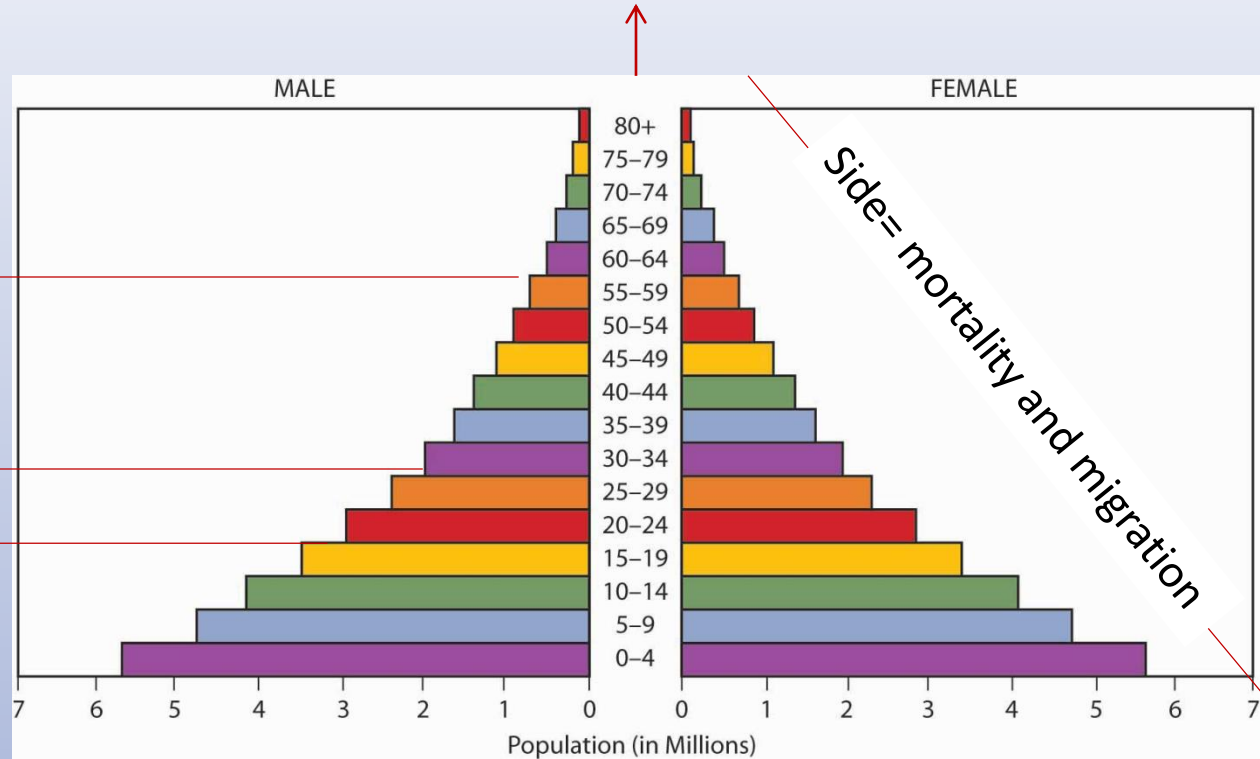
- Age that divide the population into two halves
- Small in population with high births
- Large in population with low births

Apex= People living to old age

People ≥ 60 years=
Old dependency

Median age

People < 15 years=
Young dependency



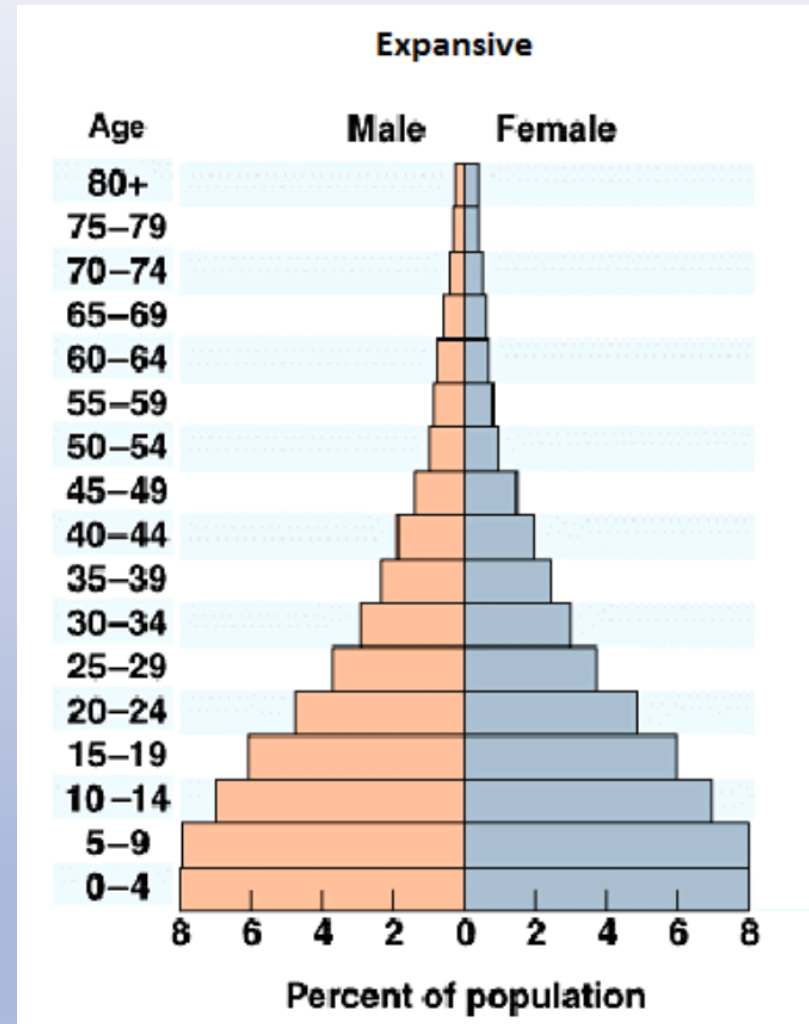
Base= births

Types of population Pyramid

- Expanding population pyramid
- Stationary population pyramid
- Constrictive population pyramid

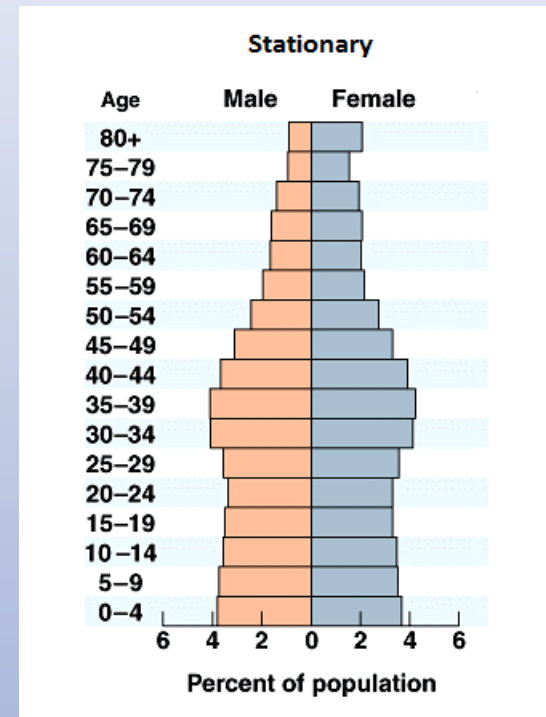
Expansive

- Expansive or expanding pyramid usually presents itself in the form of triangular shape with concaved edges
- High population growth due to:
 - High birth rate
 - Shorter life expectancy (high death rate)
- Usually associated with lower standard of living



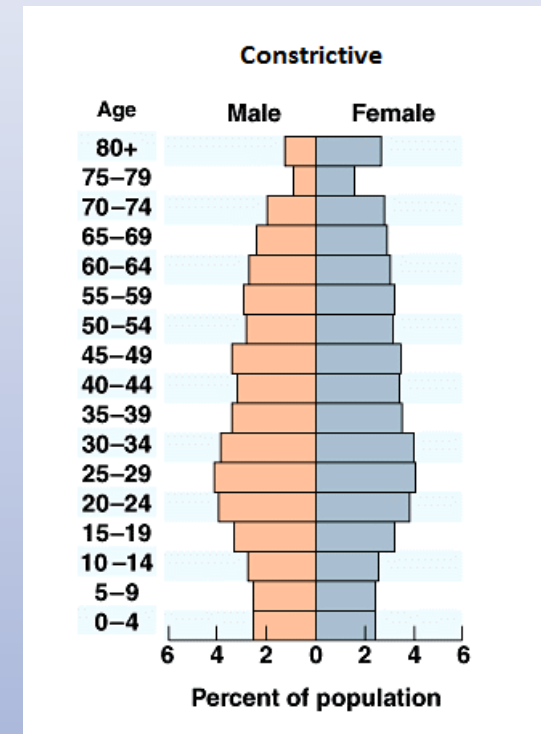
Stationary

- It is showing unchanging pattern of fertility and mortality
- Age groups almost equal, but it is expected to see smaller figures at the oldest age groups



Constrictive

- Narrow base
- Apex wider
- It is more common when immigrants are factored out
- Indicated:
 - High level of education
 - Use of birth control
 - Good health care system



Importance of population Pyramid

- It gives valuable information for human resource planners
 - Wide base vs. Narrow base, what to do?
 - If proportion of old age population is high, what to do?
- Market researchers
- Product developers
- The importance comes from what it tells us. e.g:

<https://quizlet.com/121200998/the-importance-of-population-pyramids-and-resources-flash-cards>

Thank You