

# DEMOGRAPHY

## Learning objectives

- Define demography
- Describe the process of counting of the population
- State methods of estimation of the population size in inter-census years
- List and explain demographic elements
- List demographic forces and explain how it affects demographic elements
- Describe a given population using the population pyramid
- Define and distinguish between young and old dependency ratio

## DEFINITION OF DEMOGRAPHY

*“Demo” = population*

*“graphy” = measurement*

Demography is the science concerned with the study of and the changes taking place in population size, distribution and composition

## Demographic elements

- Size (how many)
- Composition (characteristics)
- Distribution (place of residence)

## Demographic forces

- Mortality
- Natality
- Migration

Population census is

- enumeration of all persons of a country in a specified time
- collection of demographic & socioeconomic data
- analysis and publication of the data

Usual timing of population census

Census is carried every ten years at a time of minimal movement of the population (international and national travel)

## De Facto Census

Counting individuals wherever they are on the census day.

It is easier

More economic

Main disadvantages

- Persons in transit may be missed
- False information of the population size of areas with high migration or high seasonal mobility

## De Jure Census

Counting individuals at their legal permanent residence regardless of their physical presence.

Gives a factual figure

Main disadvantages

- Expensive and time consuming
- People may be missed or counted twice in view of the definition of "permanent residence" for population of high mobility

## **Inter-census estimate**

Population in inter-census years is estimated relying on “actual population”

- Use the preceding census population as starting point
- Adding the births and the immigrants
- Subtracting the deaths and the emigrants

## **Mid Year Population**

- The population count is adjusted to represent the population as of July the 1<sup>st</sup> of the year
- The mid year population is used to compute indicators related to population

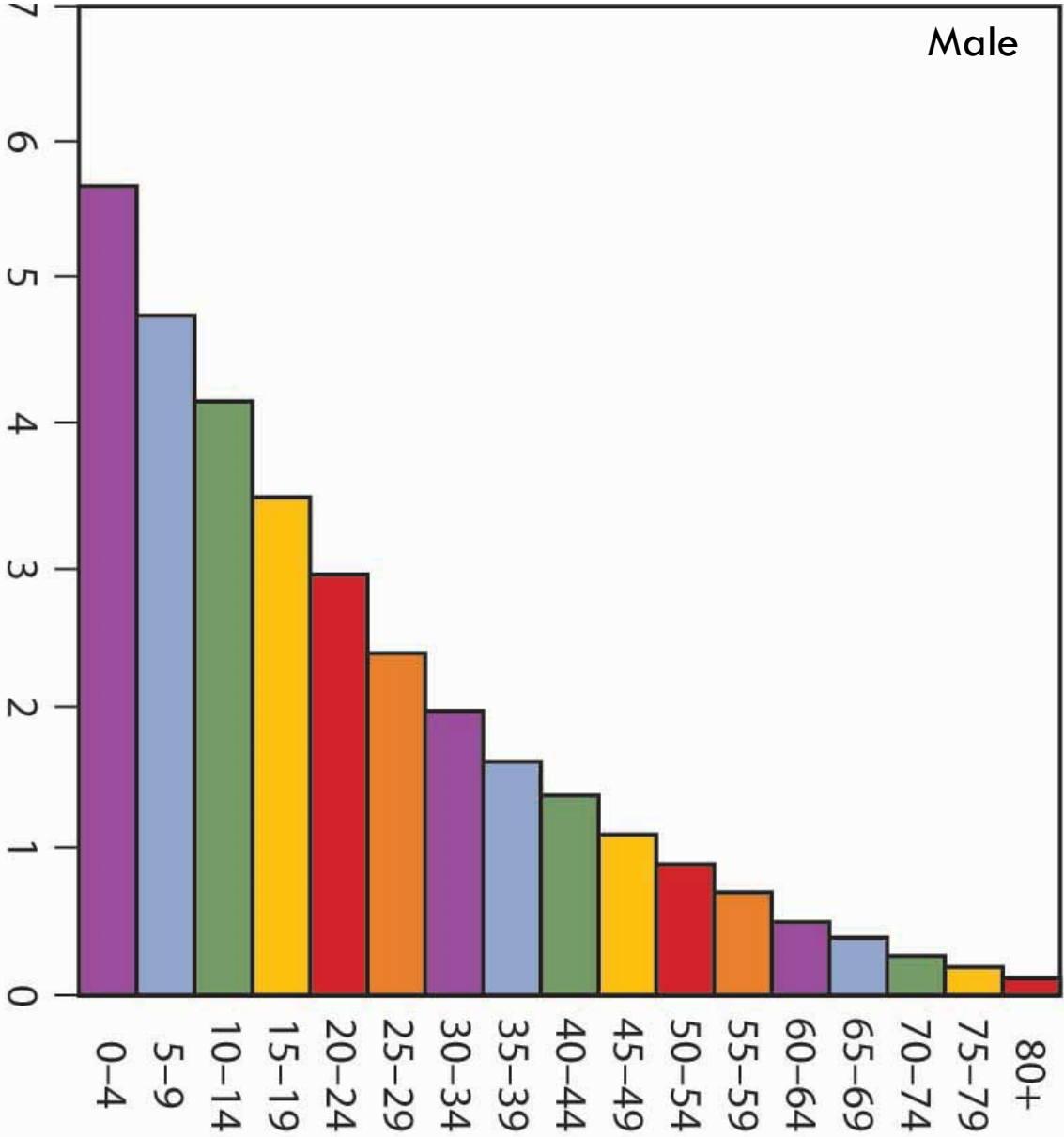


## Uses of population census

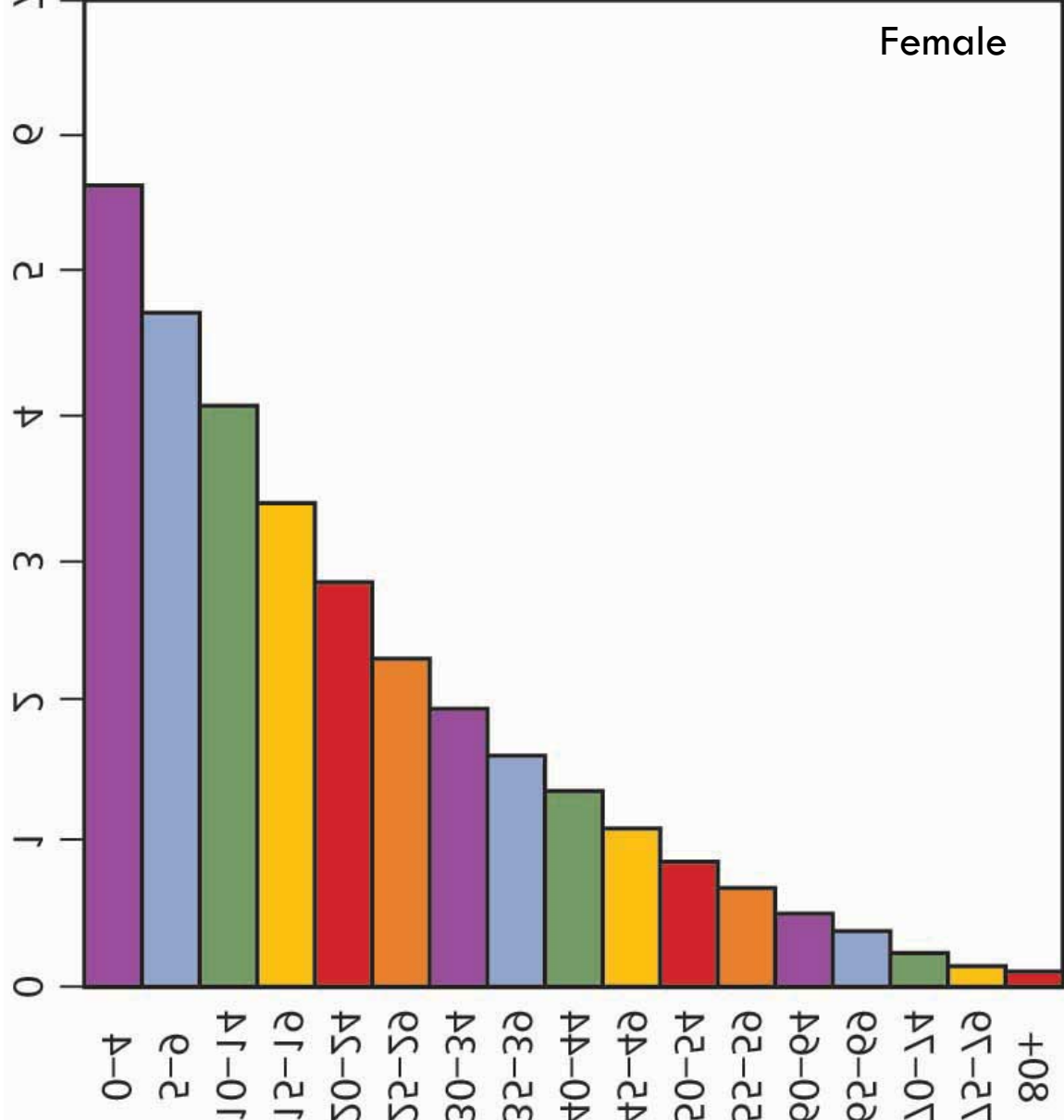
- Provides information on the changes of population size
- Population size is needed to compute morbidity, mortality and fertility rate
- Related to “health status” of the population as it depends on the dynamic relationship between number of people, their characteristics and the space they occupy
- Planning of health services is guided by demographic variables as number of health units required, their distribution and the number of healthcare workers required for service delivery

# POPULATION PYRAMID

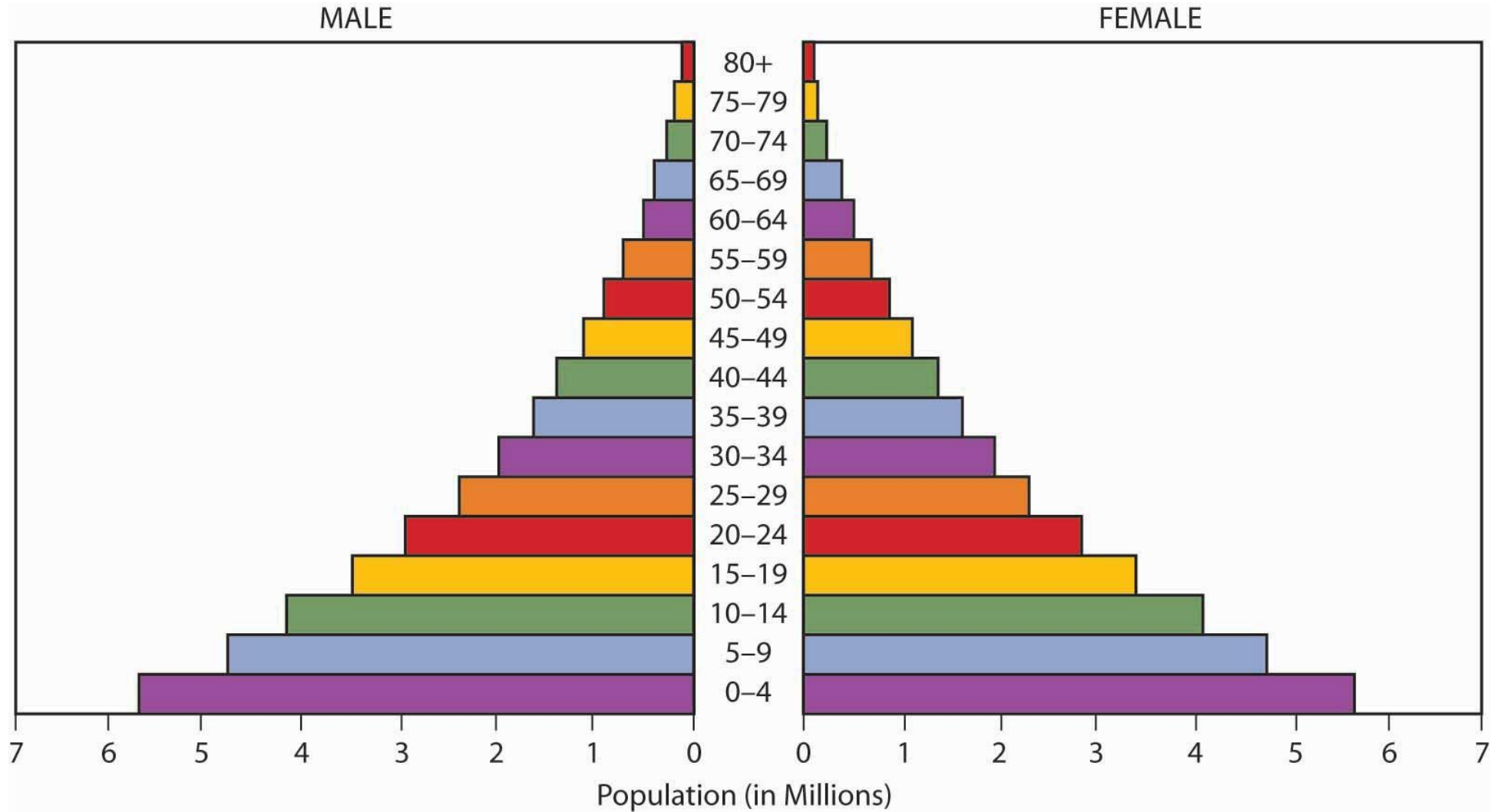
Population (in millions)



Population (in millions)



Age in years



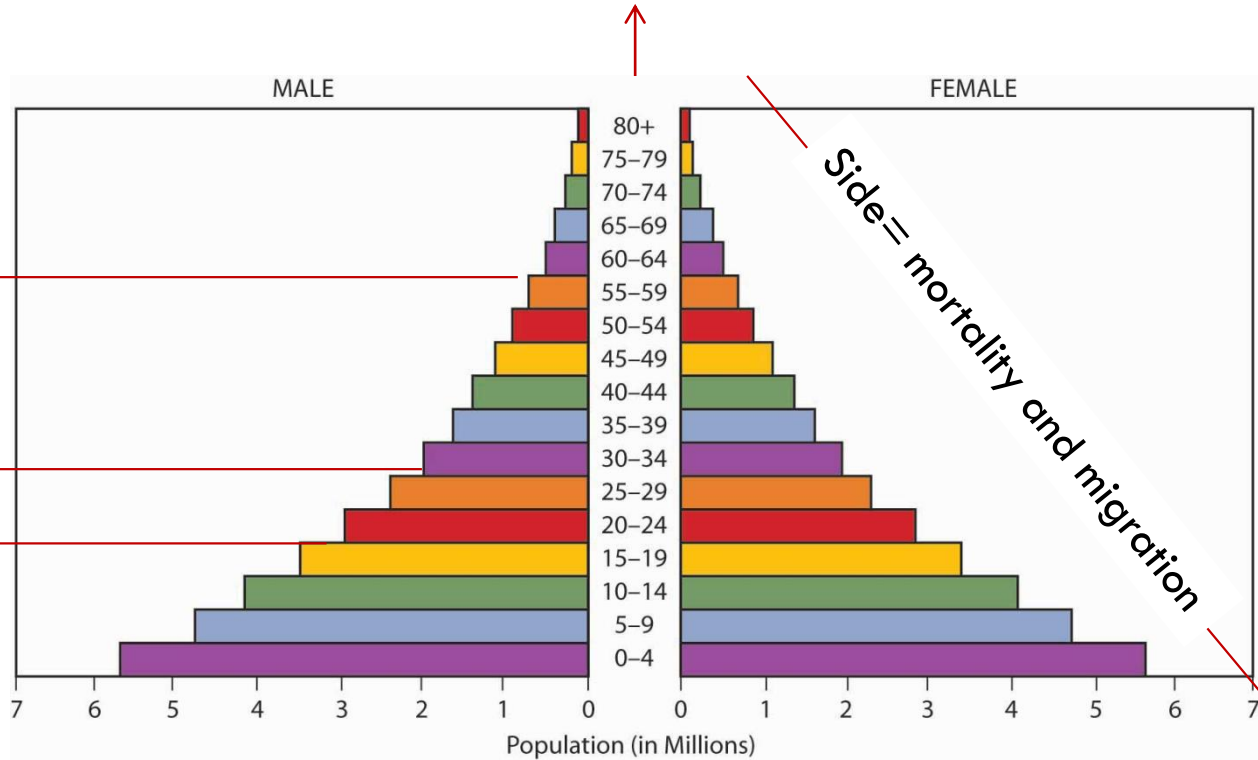
Population pyramid is a graphical presentation of the age and sex composition of the population represented by two histograms (one for male and the second for female) of the age distribution of the population set at 5-year interval and placed back to back

Apex= People living to old age

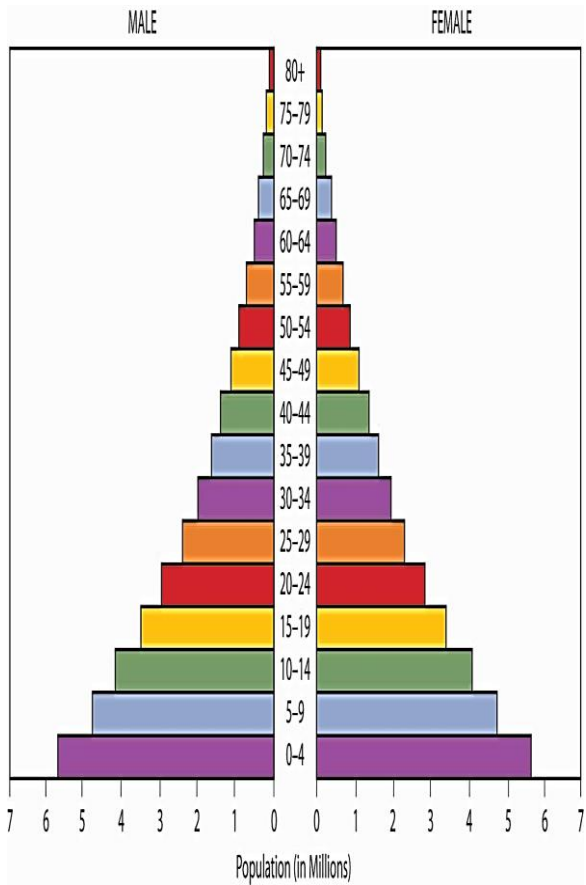
People  $\geq 60$  years=  
Old dependency

Median age

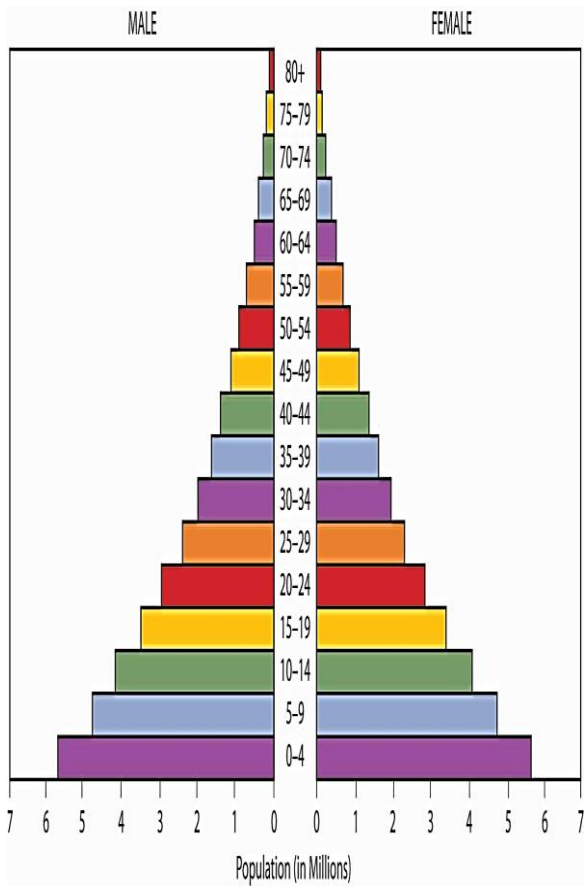
People  $< 15$  years=  
Young dependency



Base= births



- Halves -Proportion of males and 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
  - Steep slope reflects rapid decrease
  - Almost straight side reflects slow decrease



- Less than 15

- Represents the size of people below 15 years
- Represents the size of dependent youth
- Large size in rapidly growing population
- Small size in slowly growing population

- 60 + years

- Represents the size of people  $\geq 60$  years
- Represents the size of dependent old
- 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

Dependency ratio reflects the proportion of those who depends on the working group (15 to less than 60 years)

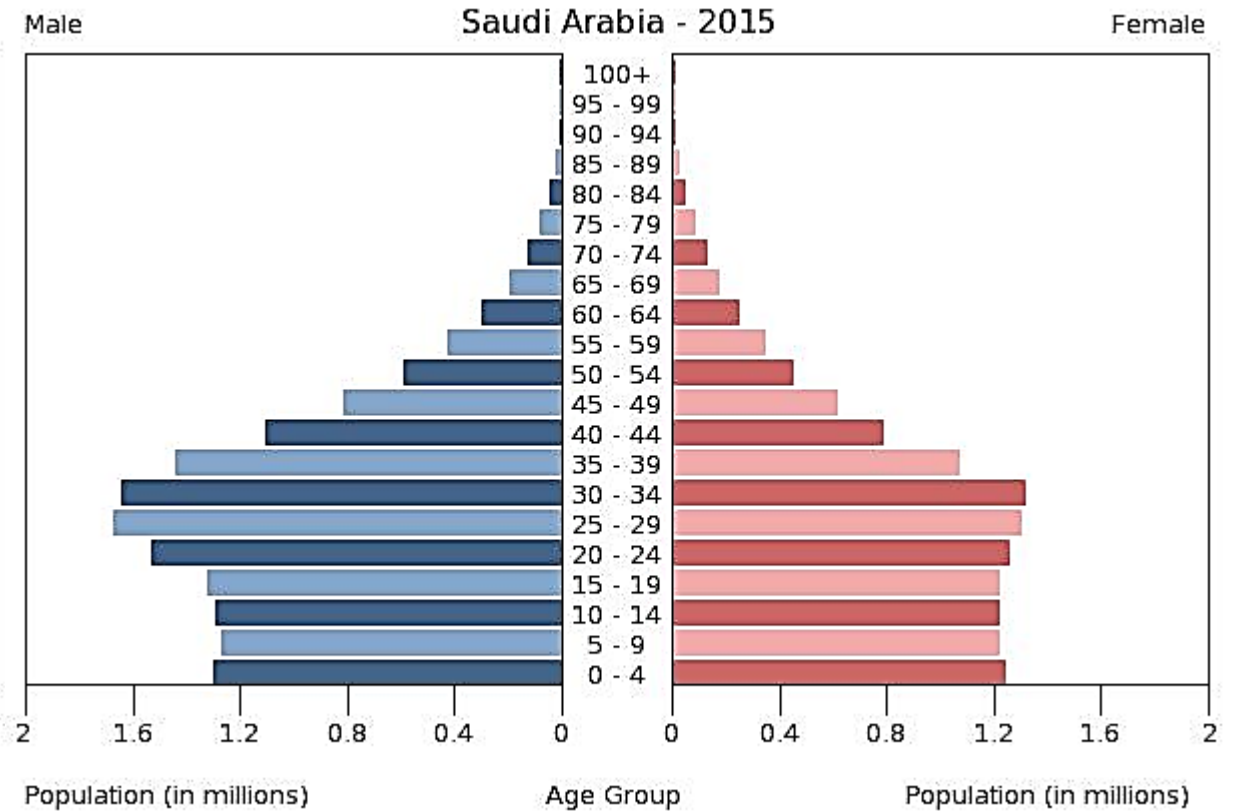
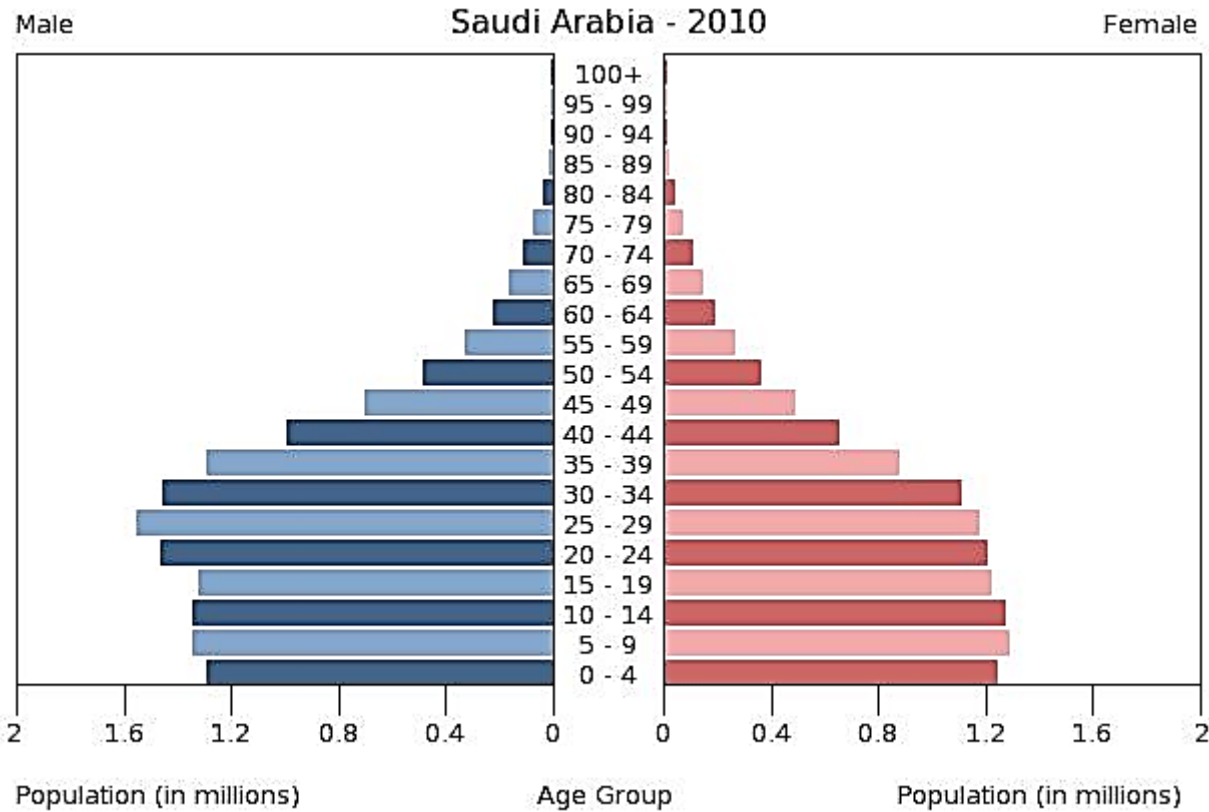
$$\text{Young dependency ratio} = \frac{\text{Population } <15 \text{ years}}{\text{Population } 15 \text{ to } <60 \text{ years}} \times 100$$

$$\text{Old dependency ratio} = \frac{\text{Population } \geq 60 \text{ years}}{\text{Population } 15 \text{ to } <60 \text{ years}} \times 100$$

$$\text{Total dependency ratio} = \frac{\text{Population } <15 \text{ years } \&\geq 60 \text{ years}}{\text{Population } 15 \text{ to } <60 \text{ years}} \times 100$$

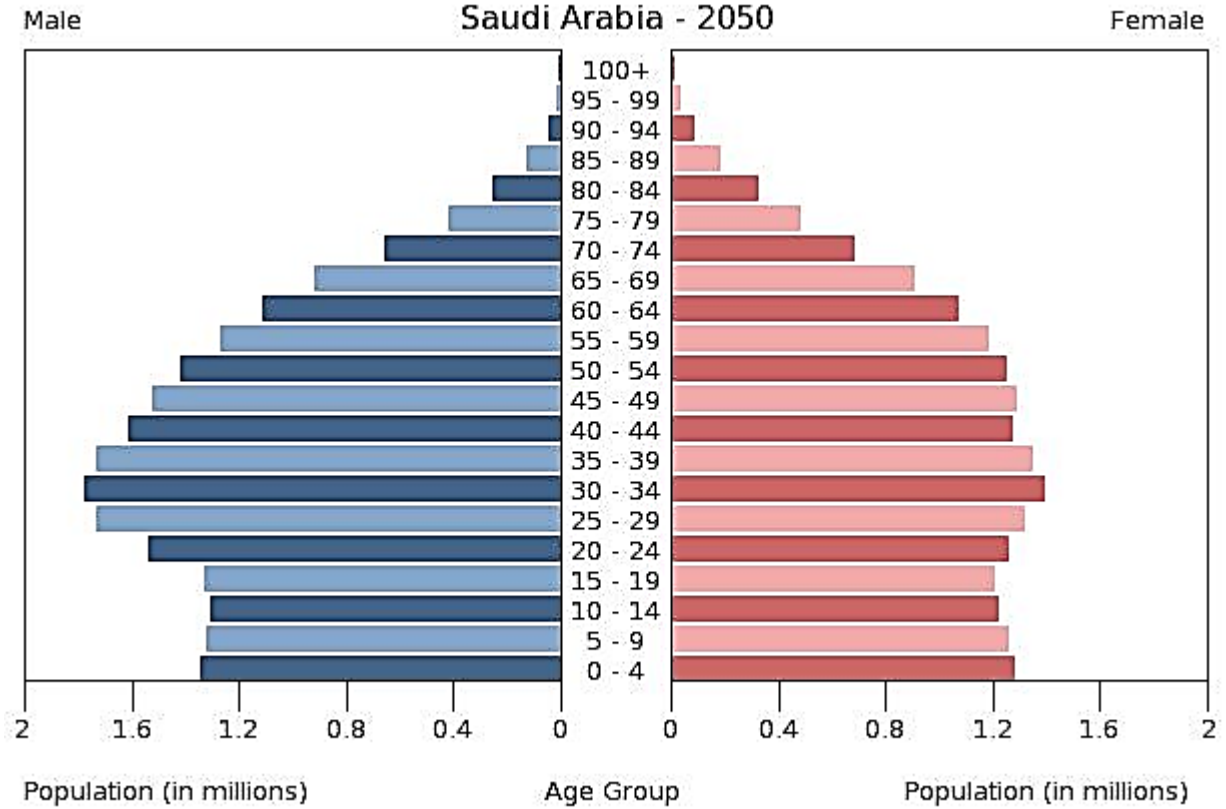
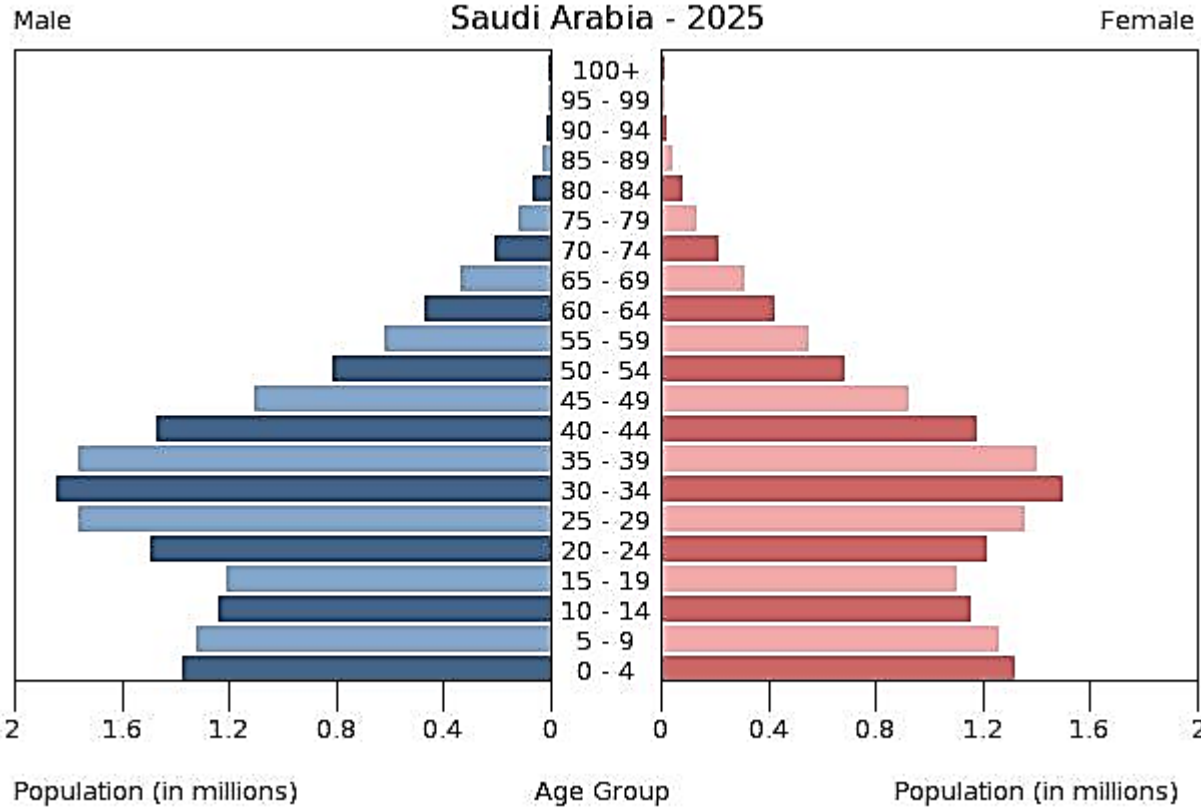


# SAUDI POPULATION



Population 25 732 000  
 CBR 19 per 1000 population  
 TFR 2.4 per woman  
 Growth rate 1.5%  
 CDR 3 per 1000 population  
 Life expectancy 74 years

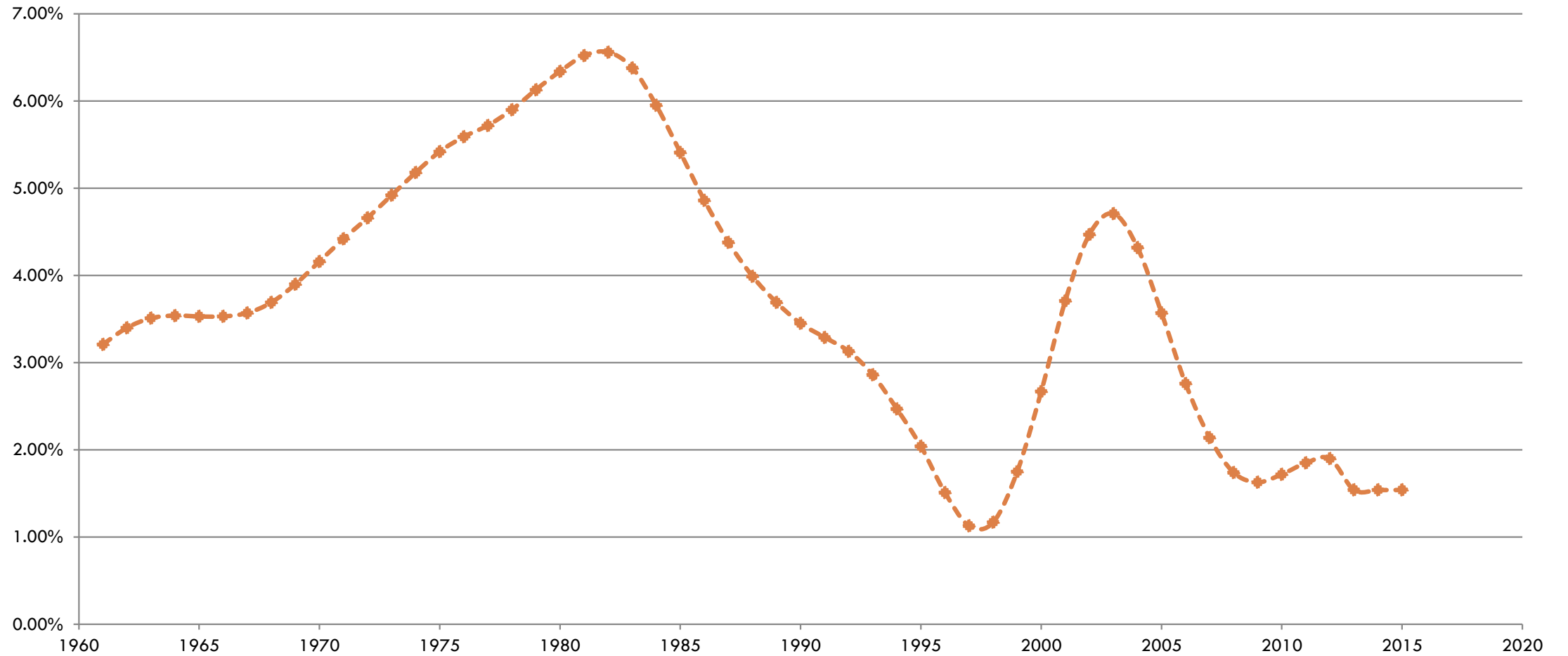
Population 27 752 000  
 CBR 19 per 1000 population  
 TFR 2.1 per woman  
 Growth rate 1.5%  
 CDR 3 per 1000 population  
 Life expectancy 75 years



Population 31 877 000  
 CBR 17 per 1000 population  
 TFR 2 per woman  
 Growth rate 1.3%  
 CDR 4 per 1000 population  
 Life expectancy 77 years

Population 40 251 000  
 CBR 13 per 1000 population  
 TFR 2 per woman  
 Growth rate 0.7%  
 CDR 6 per 1000 population  
 Life expectancy 81 years

Growth%



Years

Population growth in KSA 1960 - 2015

Total population	27 752 316
Male population	15 105 575
Female population	12 646 741
Sex ratio (M/F)	119.4/100
Below 15 years	7 512 186
15 to < 60 years	18 802 626
≥ 60 years	1 437 504
Young dependency ratio	39.95%
Old dependency ratio	7.64%
Total dependency	47.59%