Trends and Dynamics of Human Population

If one were to analyze a series of world population density maps published over the past several decades, two important points emerge:

1) Population is not distributed uniformly around the world.

- Some areas support large populations (One out of every three people in the world is from either India or China); other areas are very sparsely populated.

2) Population patterns and rates of growth change over time.

With respect to growth rates, there are tremendous disparities around the world. We live in "two very different demographic worlds," one relatively small, old, and wealthy (with very high consumption rates per capita) and the other very large, young, and poor (with relatively low consumption rates per capita).

Population Distribution

- MDCs account for 20% of world population but consume the lion's share of resources. Some countries (e.g., Denmark, Sweden) have reached ZPG (births plus immigration = deaths plus emigration); others have negative growth rates (e.g., Italy, Germany, Hungary, Japan).

- LDCs account for 80% of world population. Some countries (esp. India, China, in the Middle East and Africa south of the Sahara) have very high growth rates. Nigeria - the most populous country in Africa - had 33 million inhabitants in 1950. By 2050, it is projected to have 300 million.

- By 2025, MDCs will account for only 16% of world population. *This is because over 90% of population growth over the next 30 years will occur in LDCs* (esp. "hot spots" Africa and Middle East)

Historically, what has caused world population to grow?

When we look at world population growth over the past several thousand years, we see that it has not grown evenly. There have been spurts (sudden) in growth.

Spurts in population growth (Three Revolutions)

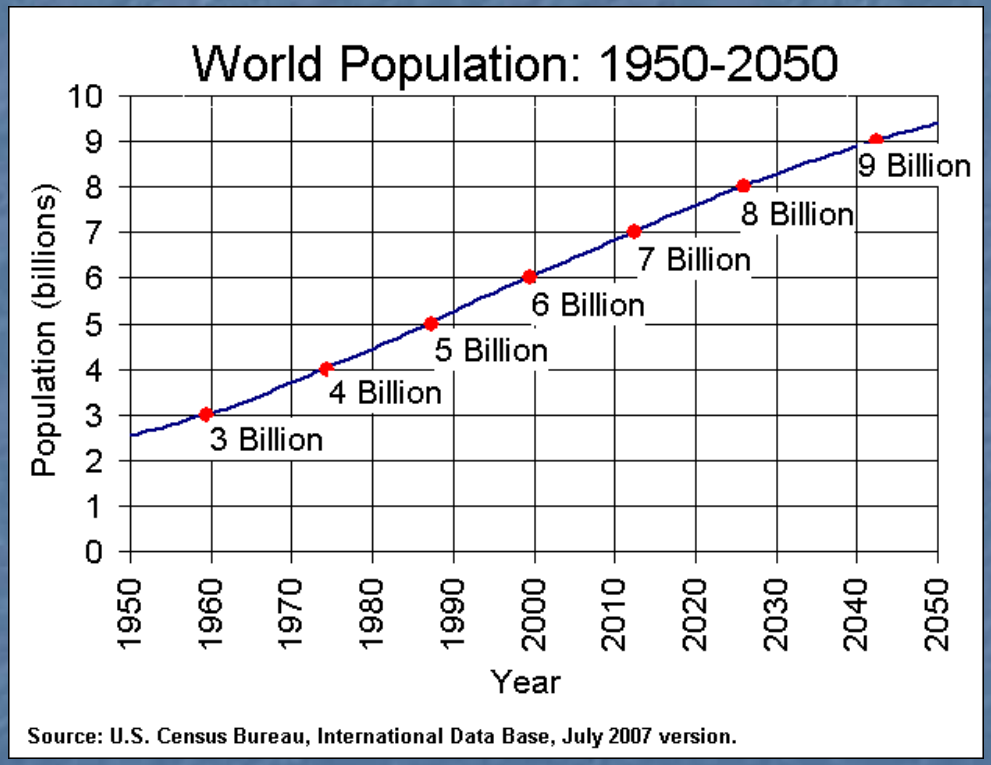
- 8000 B.C. - Agricultural Revolution (plant and animal domestication)
- 1750 A.D. - Industrial Revolution (agricultural mechanization, transport, sanitation, health)
- 1950 A.D. - Medical Revolution (elimination of many historical causes of death)

And it keeps on growing . . .

It took all of human history to reach 1 billion people in 1804.

It only took 150 years to reach 3 billion by 1960.

World population has more than doubled since 1965.



How do we measure population changes?

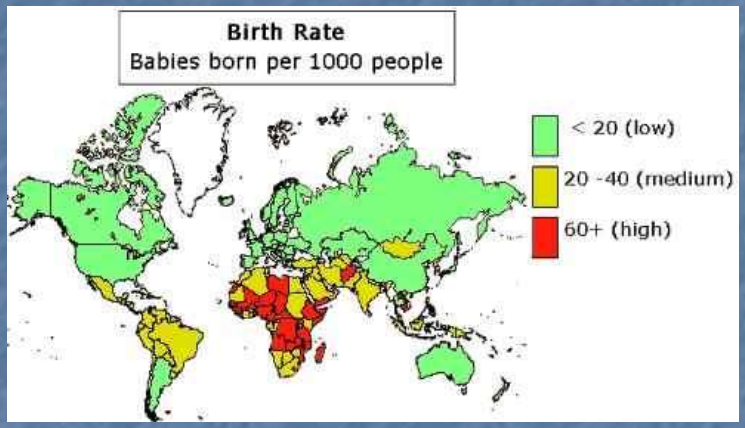
- Rate of Natural Increase - Percentage by which a population grows in a year (birth rate minus death rate). Does not take migration into account. Current rate is about 1.14% for the world.

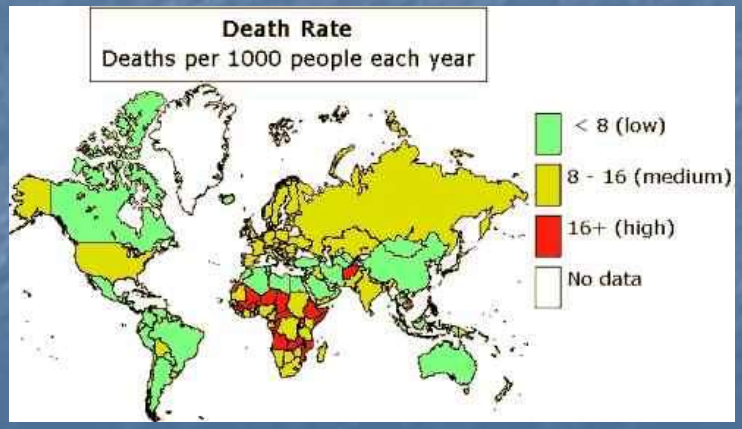
- Doubling time - Number of years needed to double a population. Current doubling time is about 61 years for the world (in the 1960s it was 35 years).

- Recent evidence suggests . . .
  - that population growth is slowing down
  - that doubling time is increasing

Demographers also look at . . .

- crude birth rate - total number of live births in a year per 1000.
- crude death rate - total number of deaths in a year per 1000

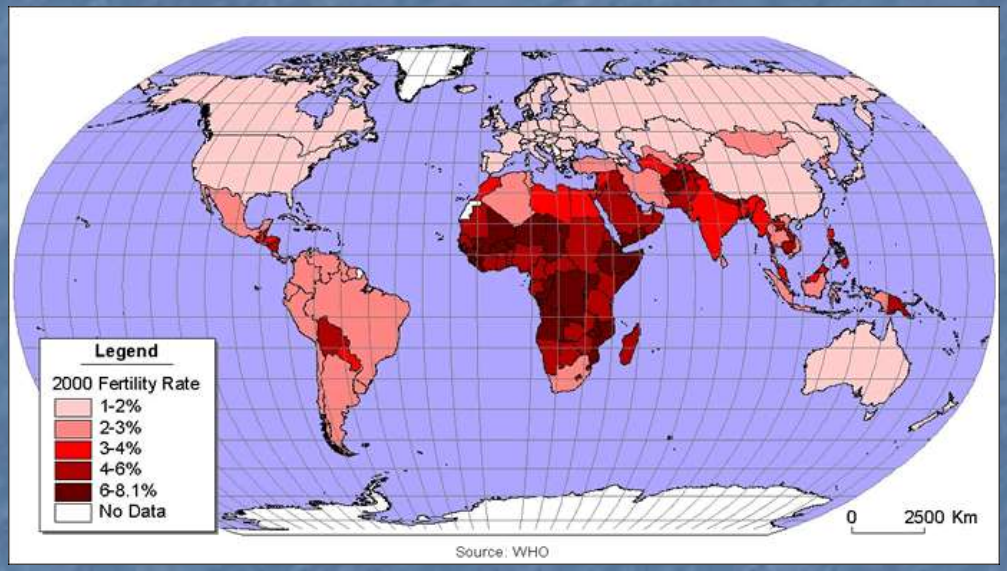




Demographers also look at . . .

- Total fertility rate - number of children a woman will have during child-bearing years (ages 15-49)

This rate varies from just over 1 (Japan, Italy) to around 7 (Niger, Mali).



Fertility Rates (Cont'd)

- Average fertility rate for the world is 2.5; 1.8 in the U.S and in Bangladesh is 2.1.

- Fertility rate across the globe has been on the decline over the past 50 years - except in Africa. In Mexico, the average family in 1975 had 7 children. In 2018, the average was down to 2.18.

Factors Affecting Birth/ Fertility Rates

- Urbanization
- Availability of legal abortions
- Availability of reliable birth control methods
- Religious beliefs, traditions, and cultural norms
- Importance of children as part of the labor force
- Average age at marriage

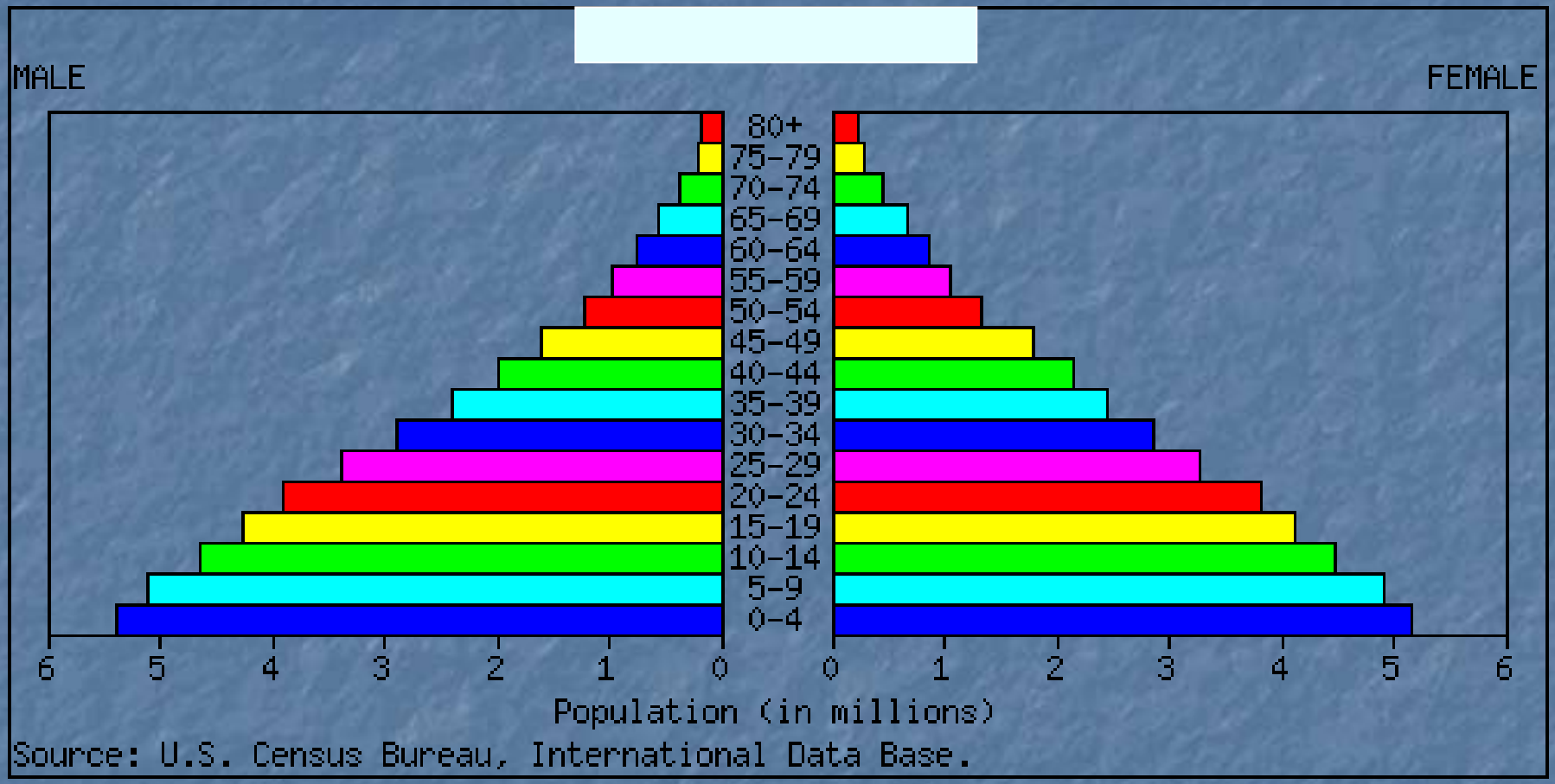
Population Pyramids

- An analytical tool, a bar graph, that allows to examine the distribution of a country's population by age and gender.
- Tells us something about dependency (young and old).
- Tells us something about the future as well (demographic momentum).
- The shape of a pyramid is determined by the crude birth rate.

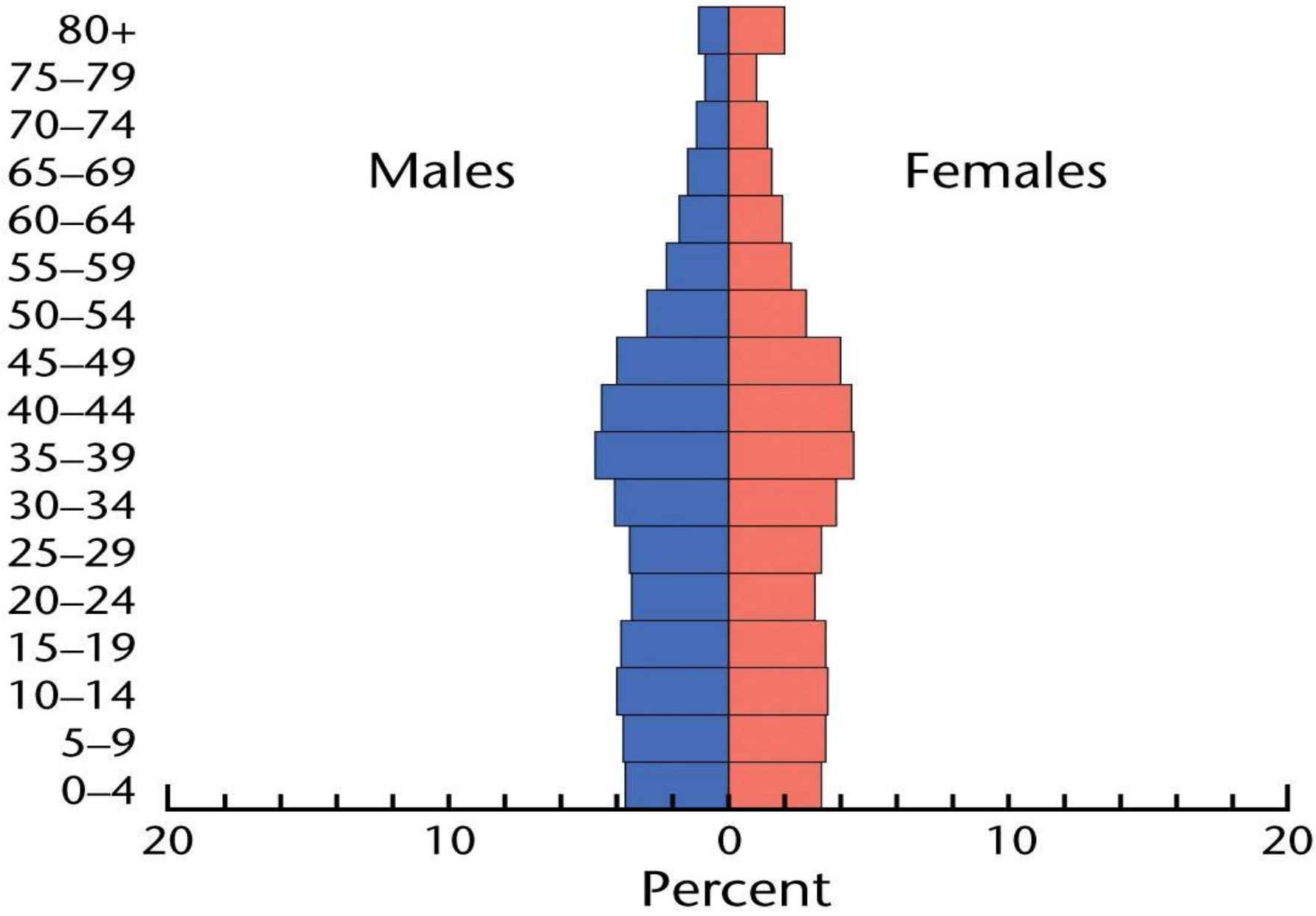
Population Pyramids

- Shape of the pyramid varies for different countries according to age distribution of the population. The shape of the pyramid explains the followings:

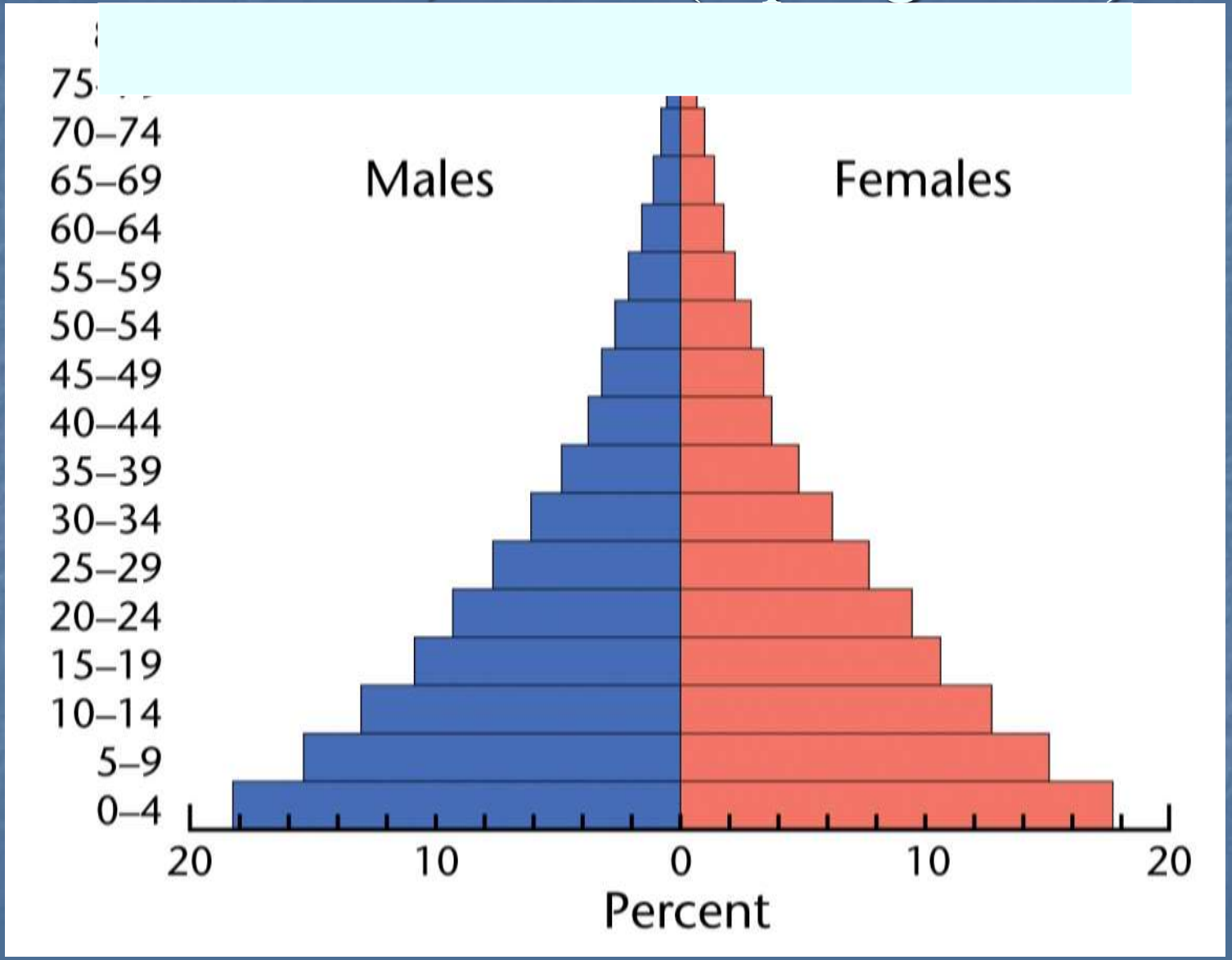
- 1. **Sex ratio:** Percentage of males and percentage of females.
- 2. **Age structure:** Percentage of each stratum.
- 3. **Life span:** Height of the pyramid and shape of the apex.
- **4. Dependency Ratio**


MALE
FEMALE
80+
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
6
5
4
3
2
1
0
0
1
2
3
4
5
6
Population (in millions)
Source: U.S. Census Bureau, International Data Base.

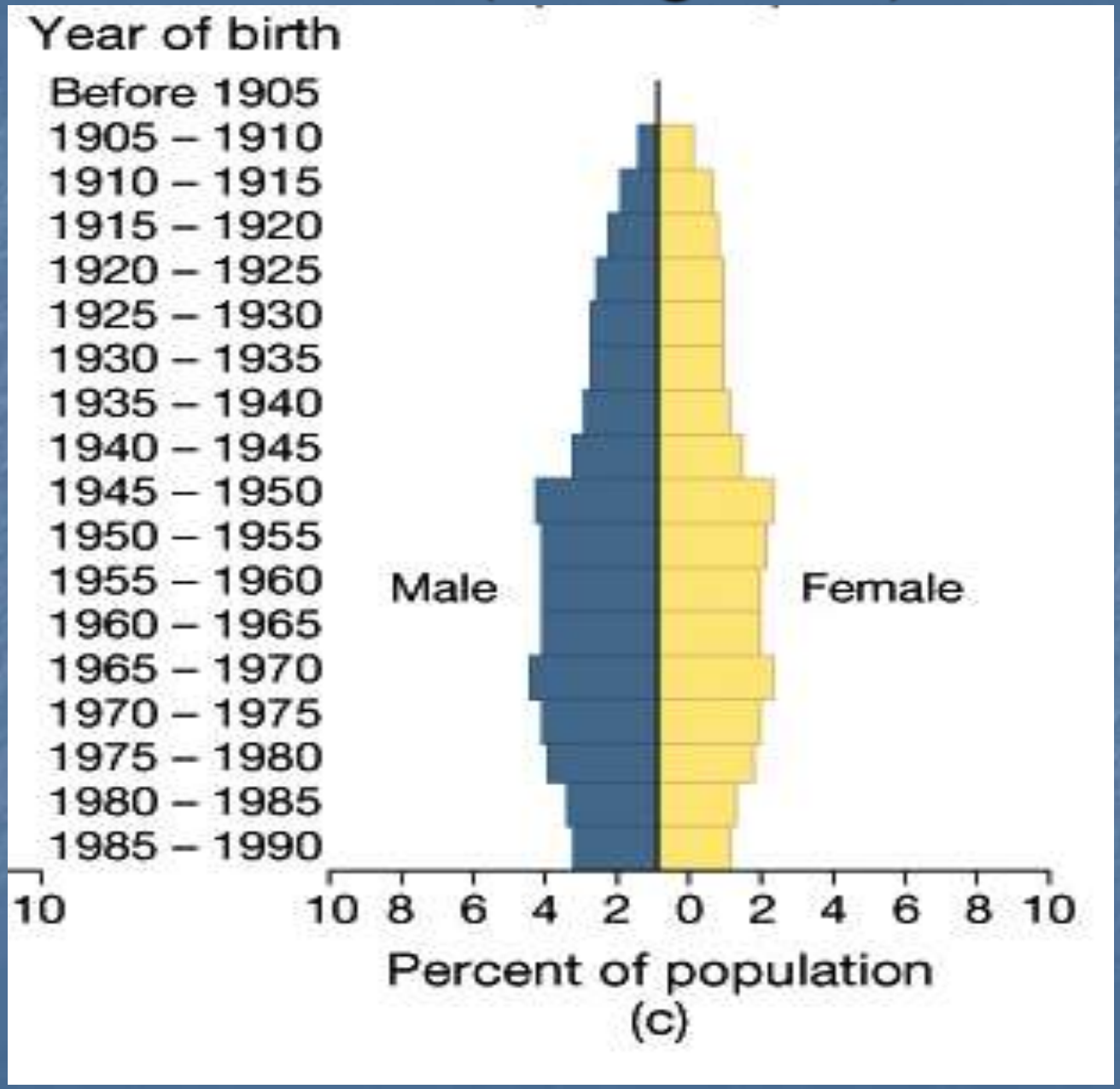
U.S. (slow growth)



Tanzania, Africa (rapid growth)



Denmark (zero growth)



Overpopulation….

What are some **consequences** of overpopulation?

- Famine
- Urbanization
- Shortage of jobs
- Poverty
- Shortage of space
- Shortage of natural resources
- Pollution
- Conflict / war
- Lack of provision of government services

Overpopulation….

What are some **solutions** to overpopulation?

- Technology and innovation
- Improved education of women
- Improved access to birth control
- Laws limiting number of children people can have

Overpopulation…..

- In both the developing and the developed world, the number one solution to overpopulation is the **education of women:**
  - Women not in the labour force have fertility rates more than twice than that of women in the labour force;
  - High income women have half as many children as low income women;
  - A woman with a college degree will have half as many children as a woman who did not pass from high school.

Demographic Transition Model

Demographic Transition - Process of change in a society's population

Descriptive

PHASE ONE: "Pre-Modern Era": Birth rates and death rates are high. The natural increase gap is small - population grows slowly. **No country is really in stage one.**

PHASE TWO: "Industrializing Era": Death rate declines and birth rate remains high. The natural increase gap becomes larger – population explosion. **Many developing countries are currently in stage 2 or 3.**

Demographic Transition .....

PHASE THREE: "Mature Industrial": Birth rate begins to decline and the death rate remains low. The natural increase gap narrows – population explosion slows.

Many developing countries are currently in stage 2 or 3.

PHASE FOUR: "Post-Industrial": Birth rate and death rate tend to be low and steady. The natural increase gap is small – slow population growth.

Many developed countries are currently in stage 4.

PHASE FIVE

- Not part of original model
- Many developed countries are seeing declining rates of natural increase and are focusing on immigration to fill jobs
- **A few developed countries are in stage 5.**

Demographic Transition Model