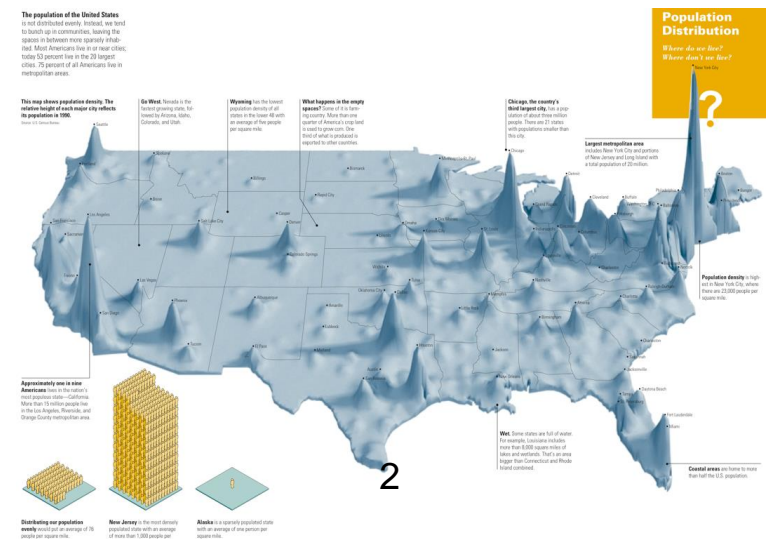


# Ch. 2 Population - Key Issues

- Where is the world population distributed?
- Why is global population increasing?
- Why does population growth vary among regions?
- Why do some regions face health threats?

- Respond to the following question:
  - What do you think the total population of the world is?
  - of the US?
  - of Nebraska?
  - of Lincoln?



# Populations

- Of the world: 7,125,752,857
- Of the US: 314,388,686
- Of Nebraska: 1,868,641
- Of Lincoln: 268,341
- Of Omaha: 416,068

# Overpopulation

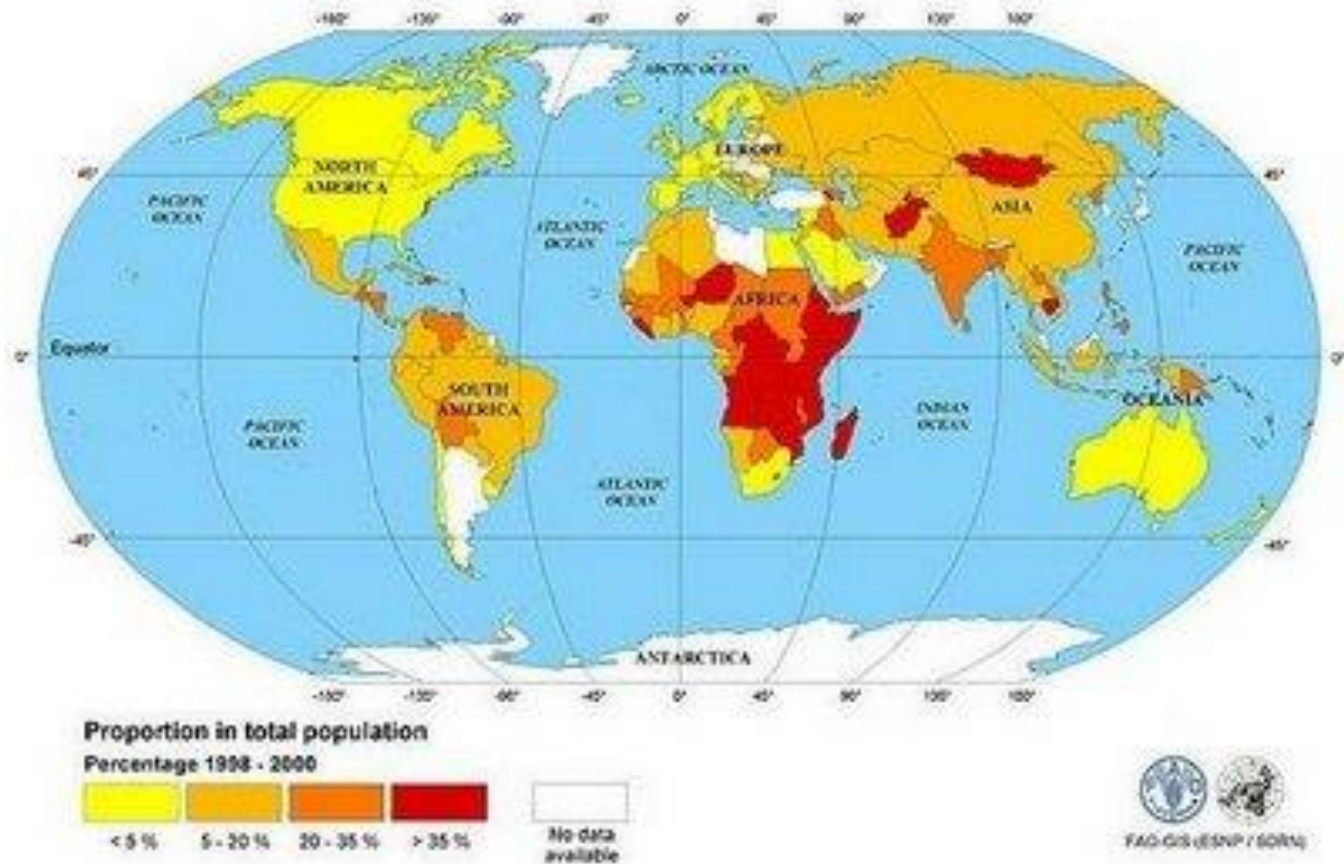
- How would you define overpopulation?
- How do geographers define overpopulation?
  - When an *area's* population *exceeds* the capacity of the environment to support it at an *acceptable standard of living*.
  - What are the variables in this definition?



# Overpopulation?

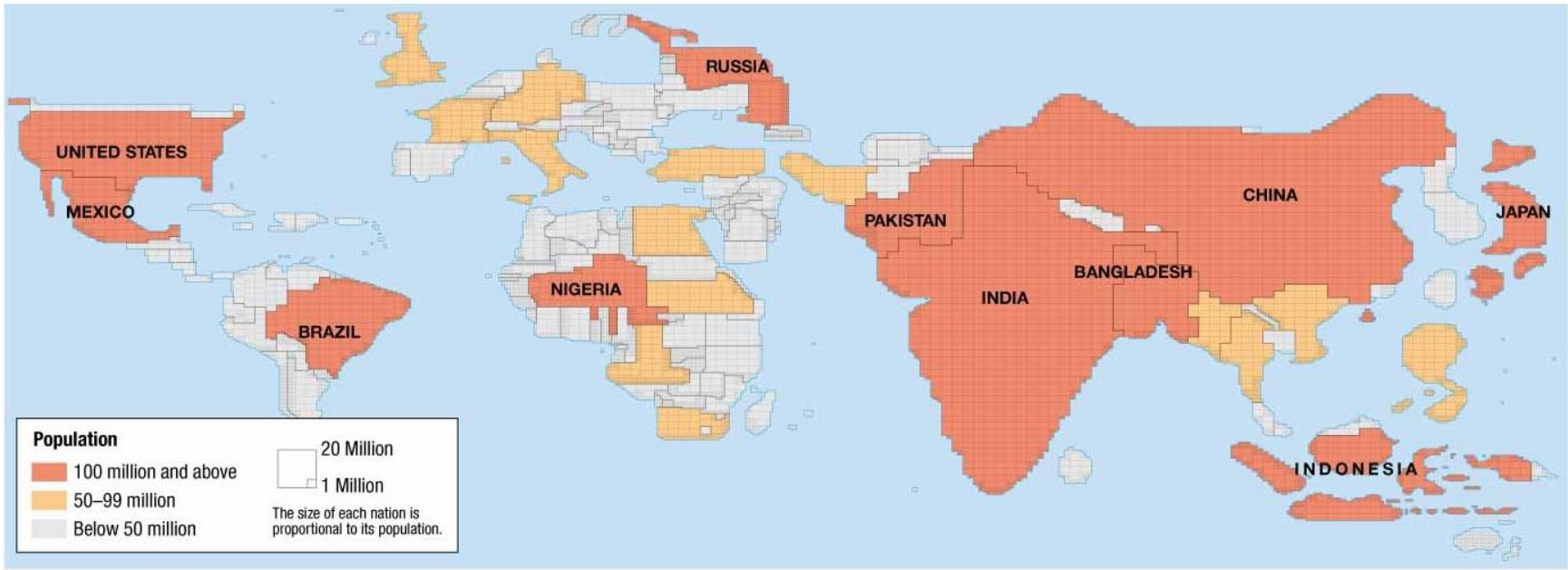
<http://www.breathingearth.net/>

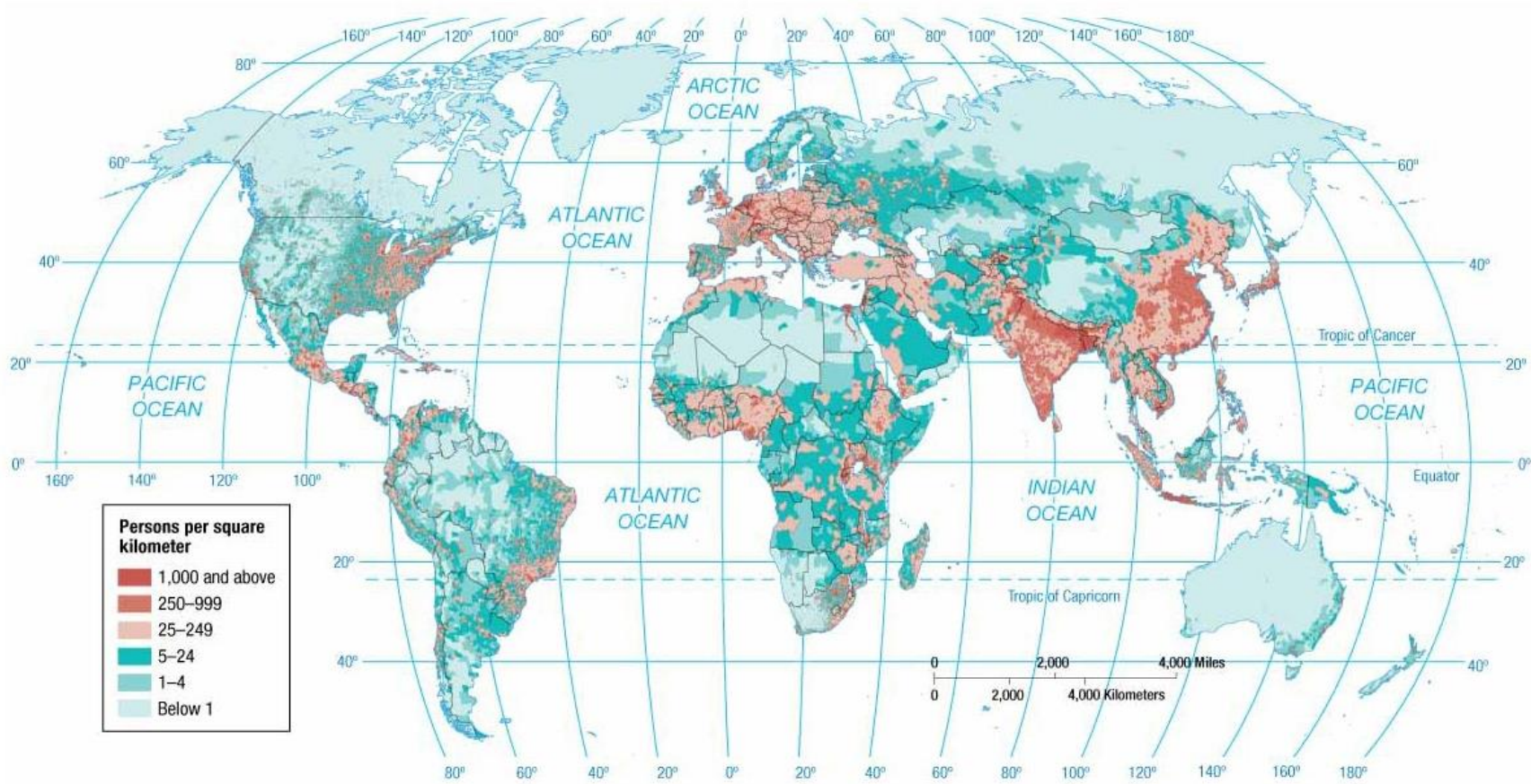
## World Starvation % of Population



# KI #1 Where Is the World's Population Distributed?

- Population Concentrations
  - 2/3 of the world's inhabitants are clustered in four regions.
    - East Asia
    - South Asia
    - Southeast Asia
    - Europe
  - Site and Situation of Population Clusters
    - Low-lying areas with fertile soil and temperate climate
    - Near an ocean or near a river with easy access to an ocean.







# Where Is the World's Population Distributed?

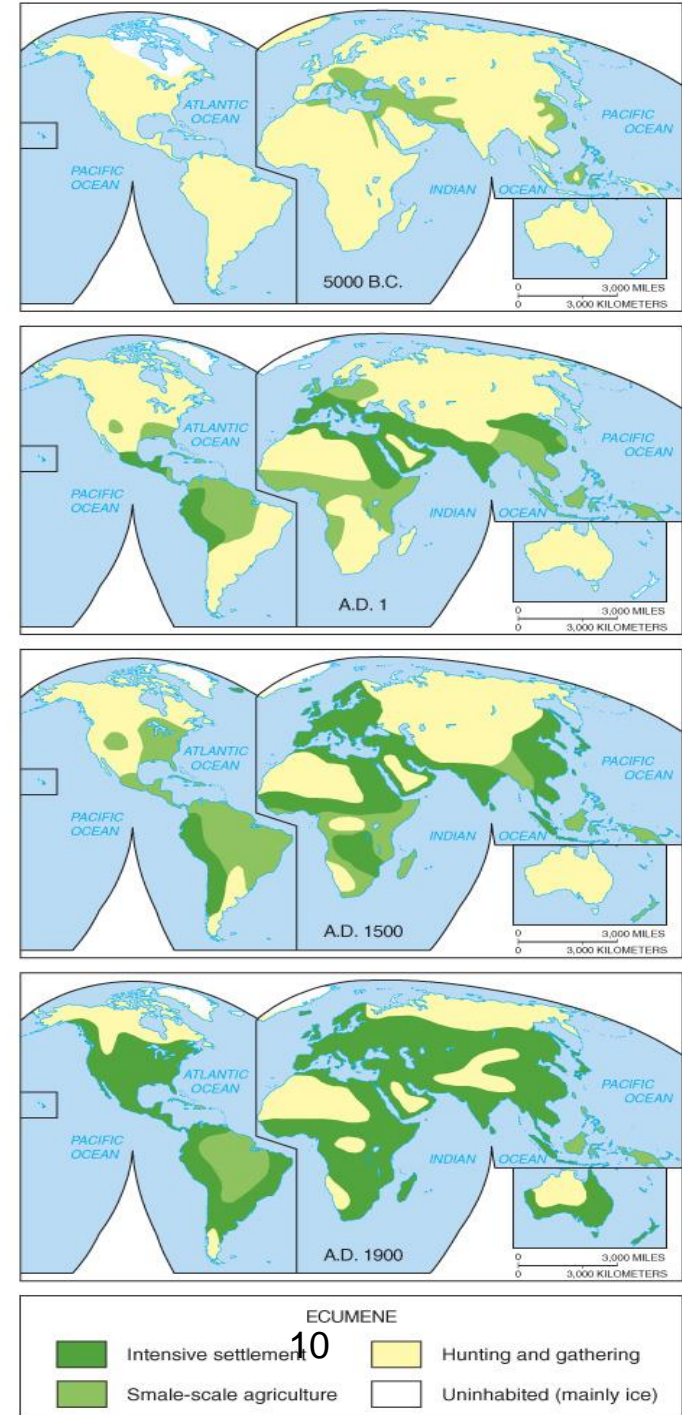
- Sparsely Populated Regions
  - Humans avoid clustering in certain physical environments.
    - Dry Lands
    - Wet Lands
    - Cold Lands
    - High Lands
  - Places considered too harsh for occupancy have diminished over time.
    - Places of permanent human settlement are termed the *ecumene*.

# ● Expansion of the Ecumene

*5000 BC - AD 1900*

**75% live on only 5% of the Earth's surface**

Fig. 2-3 (pg. 50): The **ecumene**, or the portion of the earth with permanent human settlement, has expanded to cover most of the world's land area.



# Where Is the World's Population Distributed?

- Population Density

- Density can be computed in up to three ways for a place.

1. Arithmetic Density

- Total number of objects in an area

- Computation: Divide the population by the land area

2. Physiological Density

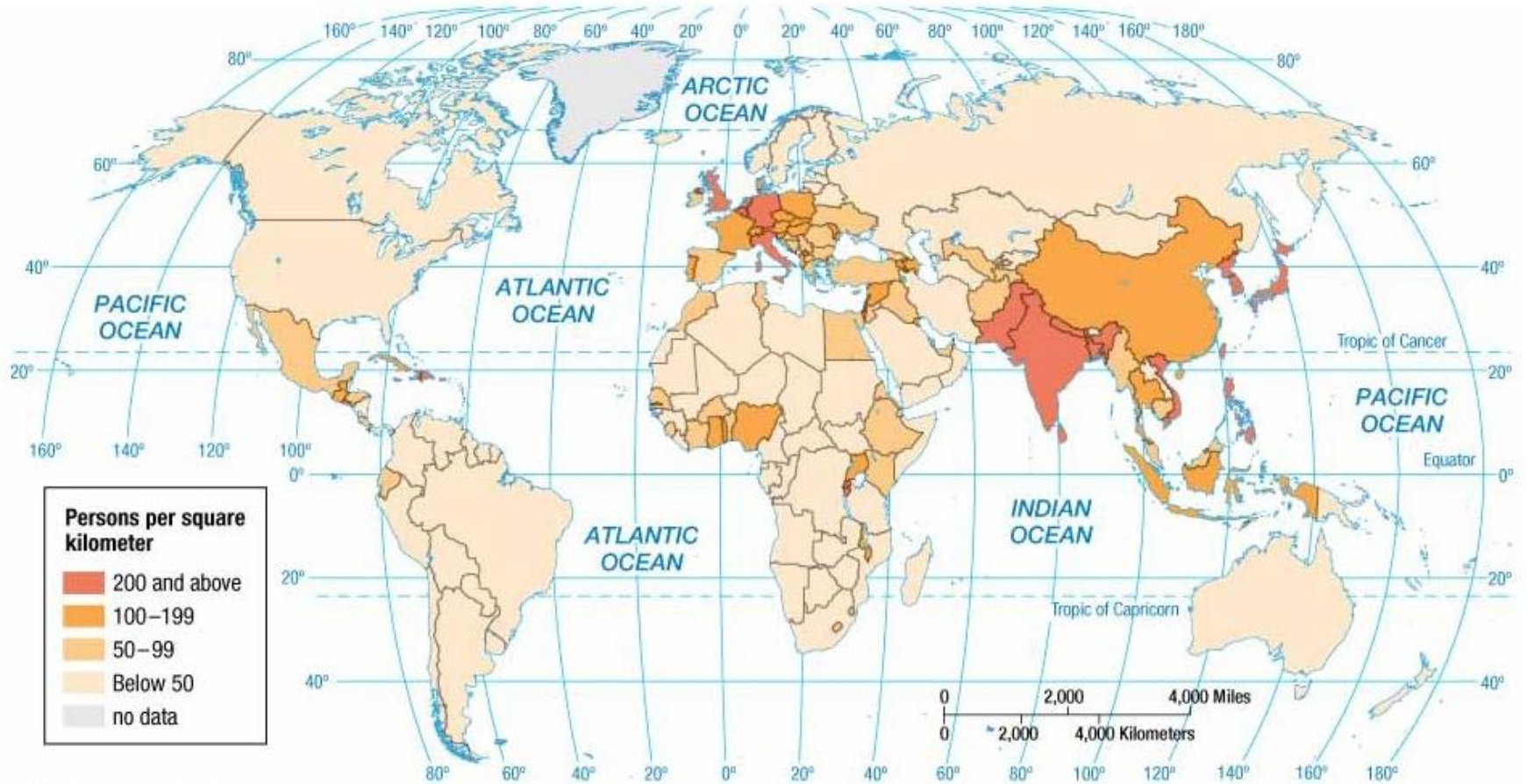
- Number of people supported by a unit area of arable land

- Computation: Divide the population by the arable land area

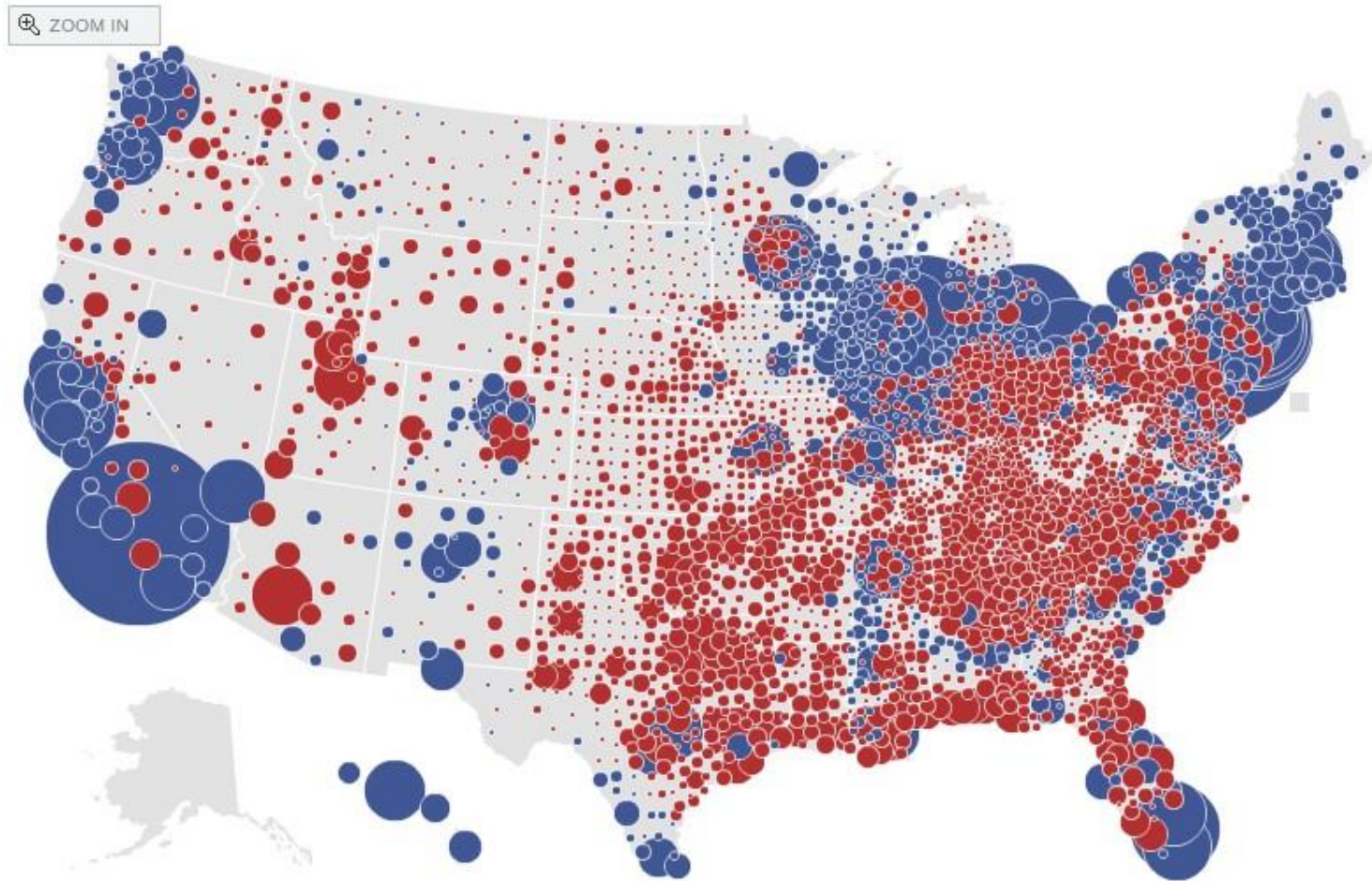
3. Agricultural Density

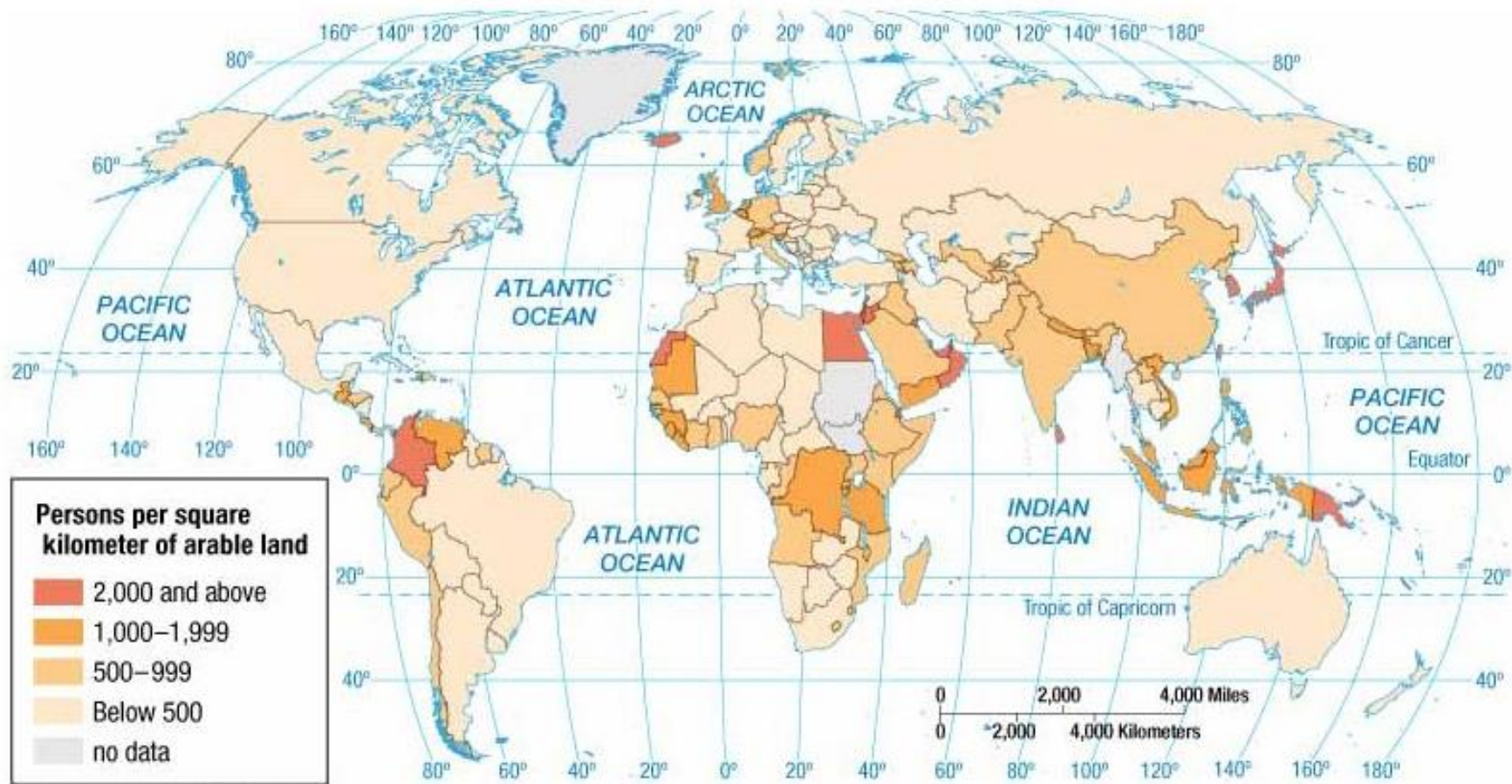
- Ratio of the number of farmers to amount of arable land

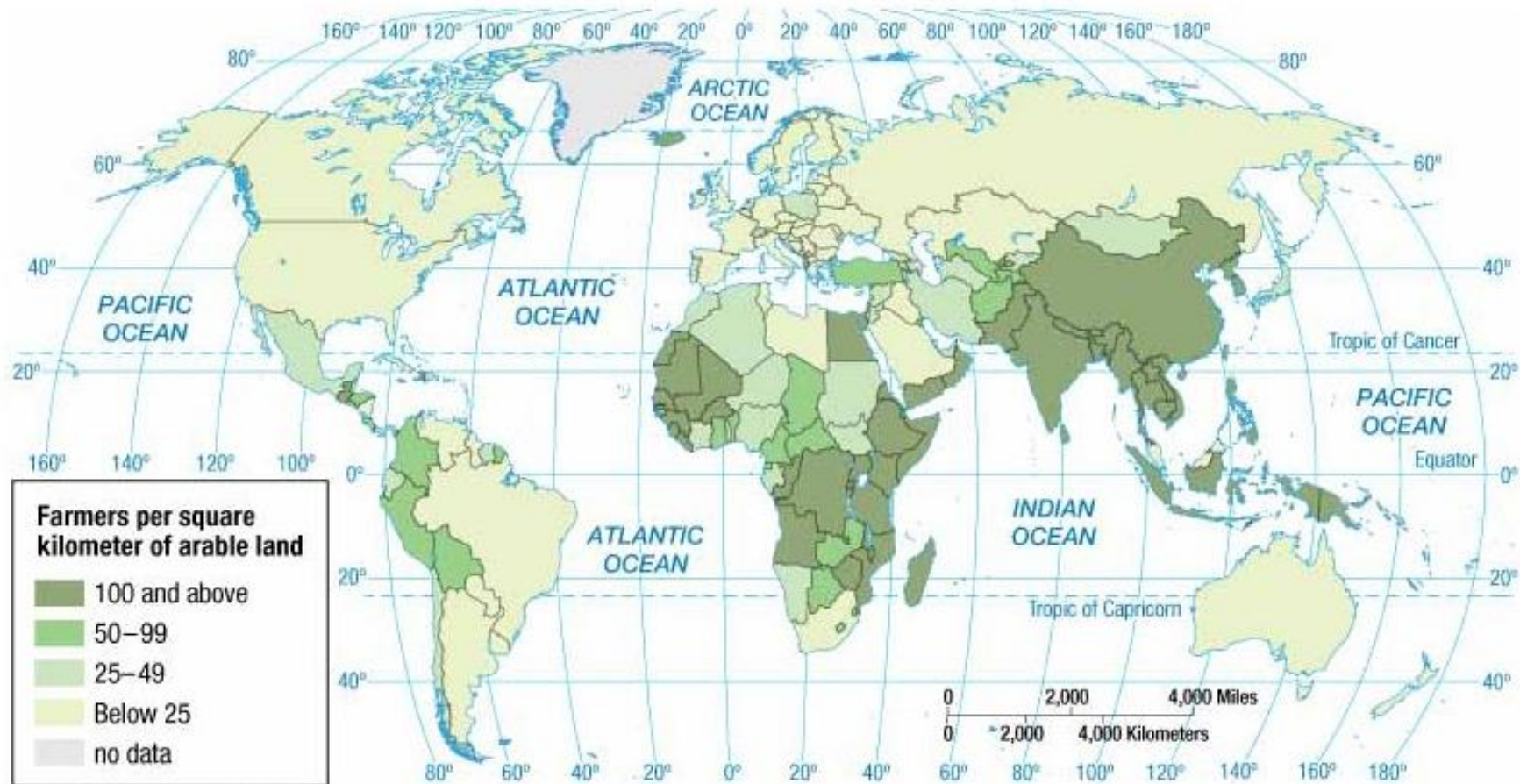
- Computation: Divide the population of farmers by the arable land area



# Arithmetic Population







# Agricultural Density



- Agricultural Density: ratio of the number of farmers to the amount of arable land.
  - US and Canada have lower agric. densities than India and Bangladesh.
  - Why would the US have fewer farmers per acre of arable land? What is different about farming in the US vs. India or a more LDC?



**TABLE 2-1** MEASURES OF DENSITY IN SELECTED COUNTRIES

	ARITHMETIC DENSITY*	PHYSIOLOGICAL DENSITY*	AGRICULTURAL DENSITY*	PERCENT FARMERS	PERCENT ARABLE
Canada	3	65	1	2	5
United States	32	175	2	2	18
Egypt	79	2,296	251	31	3
United Kingdom	255	1,083	9	2	23
Japan	338	2,695	46	3	13
India	356	690	163	58	52
Netherlands	398	1,748	23	3	23
Bangladesh	1,127	1,927	472	52	58

\*Population per square kilometer



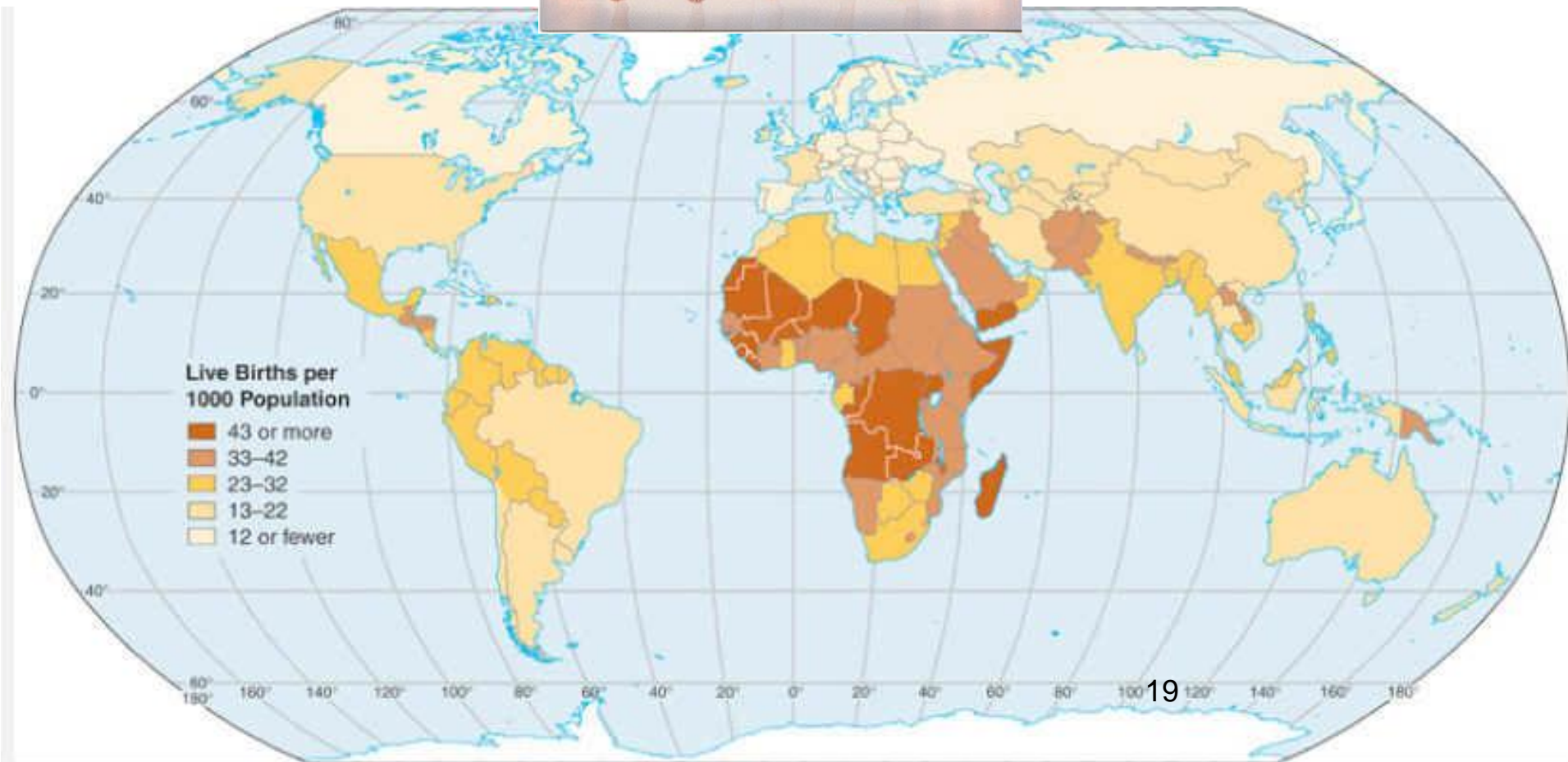
# Quick Review

- The most rapid growth in population is occurring in \_\_\_\_\_
- The most populous country in the world is \_\_\_\_\_
- A country with a large amount of arable land and a small number of farmers will have a \_\_\_\_\_ agricultural density.
- 75% of the world's population lives on 5% of the earth's surface. The portion where humans live is called the \_\_\_\_\_

# KI #2 Why Is Global Population Increasing?

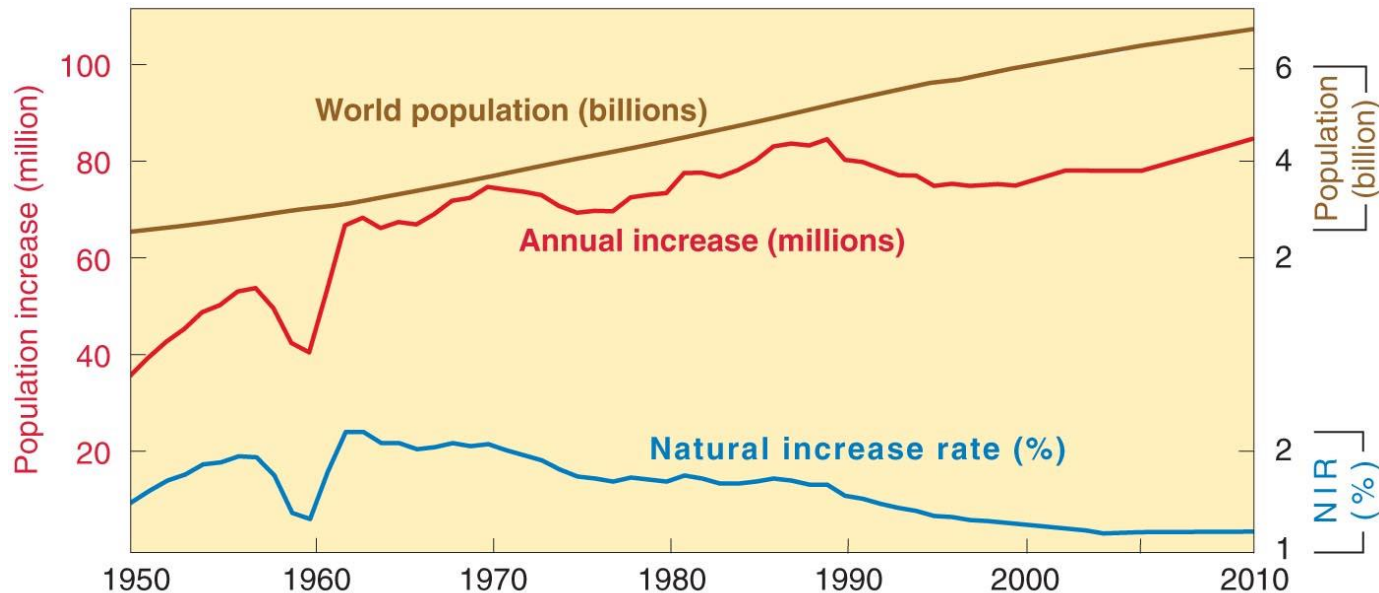
- **Components of Population Growth**
  - Geographers measure population change in a country or the world as a whole by using three measures:
    - **Crude Birth Rate (CBR)** – total number of live birth in a year for every 1,000 people alive in society.
    - **Crude Death Rate (CDR)** – total number of deaths in a year for every 1,000 people alive in society.
    - **Natural Increase Rate (NIR)** – *percentage* by which a population grows in a year.
      - Computation:  $CBR - CDR = NIR$ 
        - » Remember NIR is a percentage (  $n$  per 100, while CBR and CDR are expressed as  $n$  per 1,000)

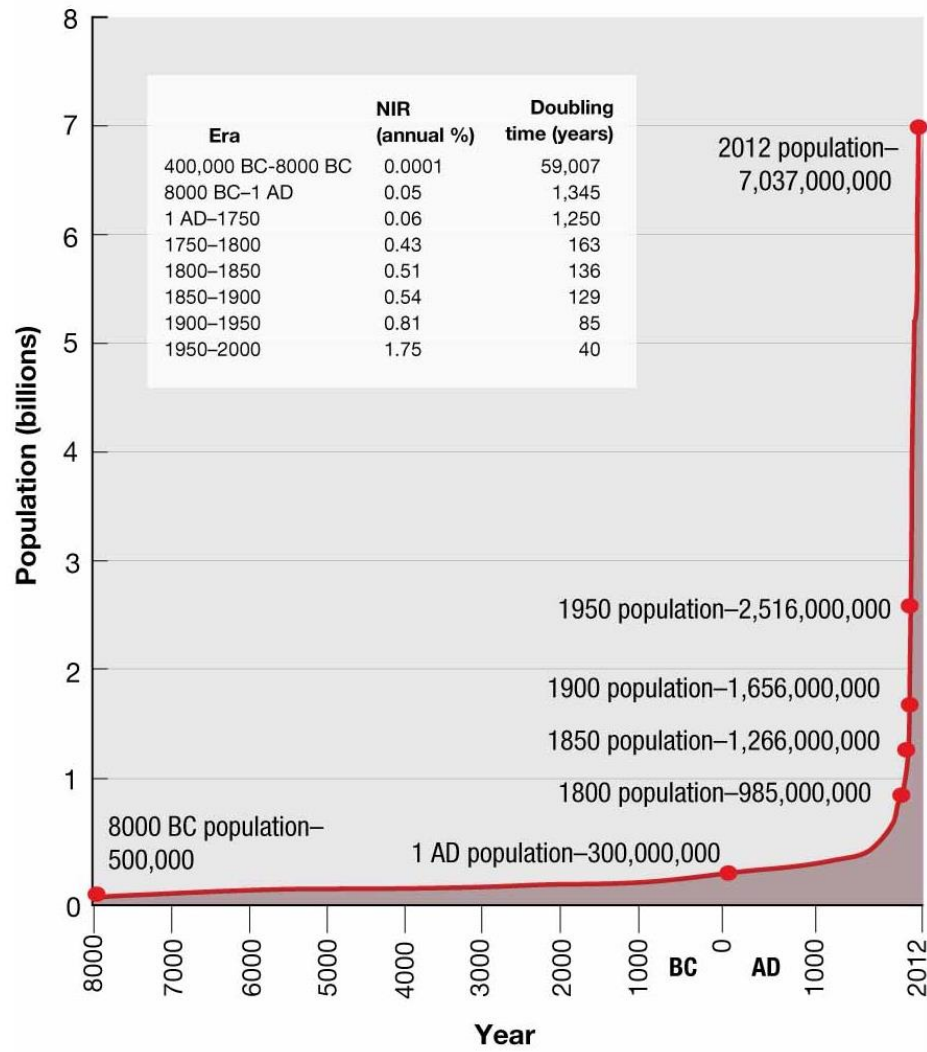
•Crude birth rate (CBR) - The number of births per 1,000





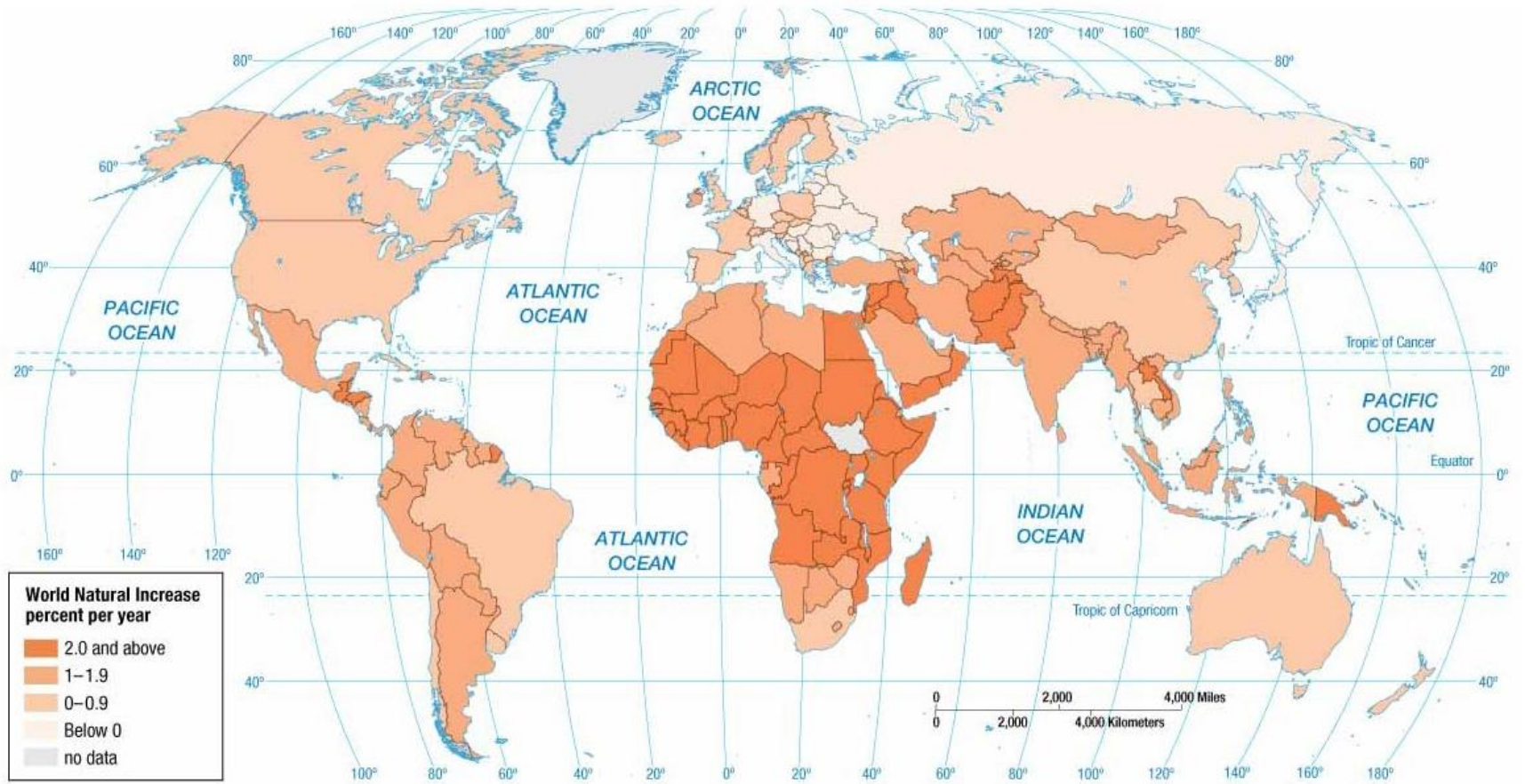
- Natural increase rate (NIR)
  - The percentage by which a population grows in a year (NIR = CBR minus CDR)
  - Hit an all-time high of 2.2% in 1963, slowly fell throughout the latter part of the century, and has declined sharply during the past decade
  - Although the NIR is % is lower the number of people be added is higher. Why?
    - Larger base!!!





# Why Is Global Population Increasing?

- Components of Population Growth
  - Natural Increase
    - About 82 million people are added to the population of the world annually.
    - Rate of natural increase affects the *doubling time*—number of years needed to double the population, assuming a constant rate of natural increase.
      - Twenty-First Century Rate (1.2 percent): 54 years
        - » Global population in 2100 would reach 24 billion.
      - 1963 (2.2): 35 years
        - » Global population in 2010 would have been 10 billion instead of nearly 7 billion.
    - More than 95 percent of the natural increase is clustered in developing countries.





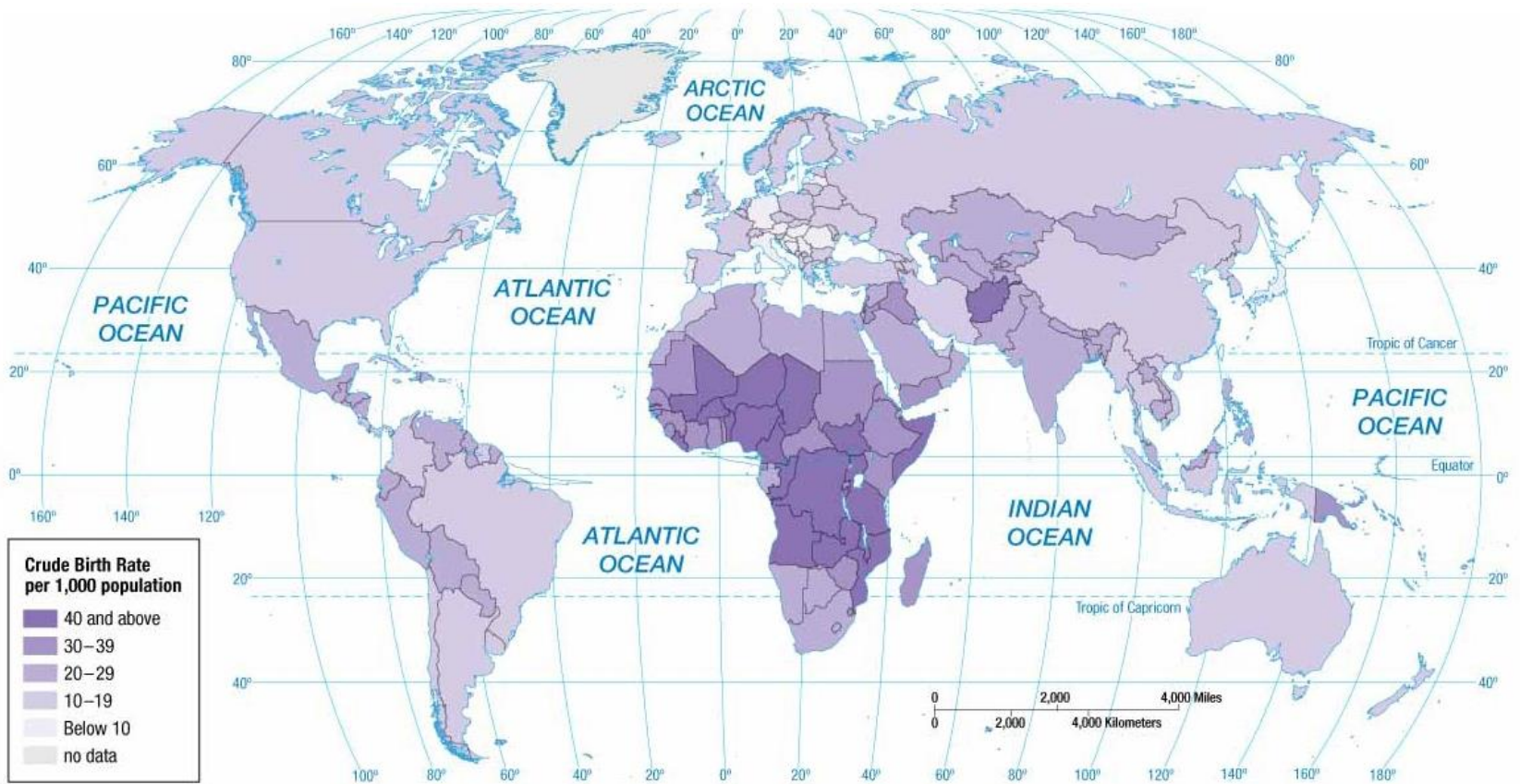
# Why Is Global Population Increasing?

- Components of Population Growth

- Mortality

- *Infant Mortality Rate (IMR)*

- Measure used by geographers to better understand death rates in a society
      - Defined as the annual number of deaths of infants under one year of age, compared with total live births
      - Usually expressed per 1,000 births rather than a percentage
      - IMR is 5 in developed countries and 80 in sub-Saharan Africa.



# Why Is Global Population Increasing?

- Components of Population Growth

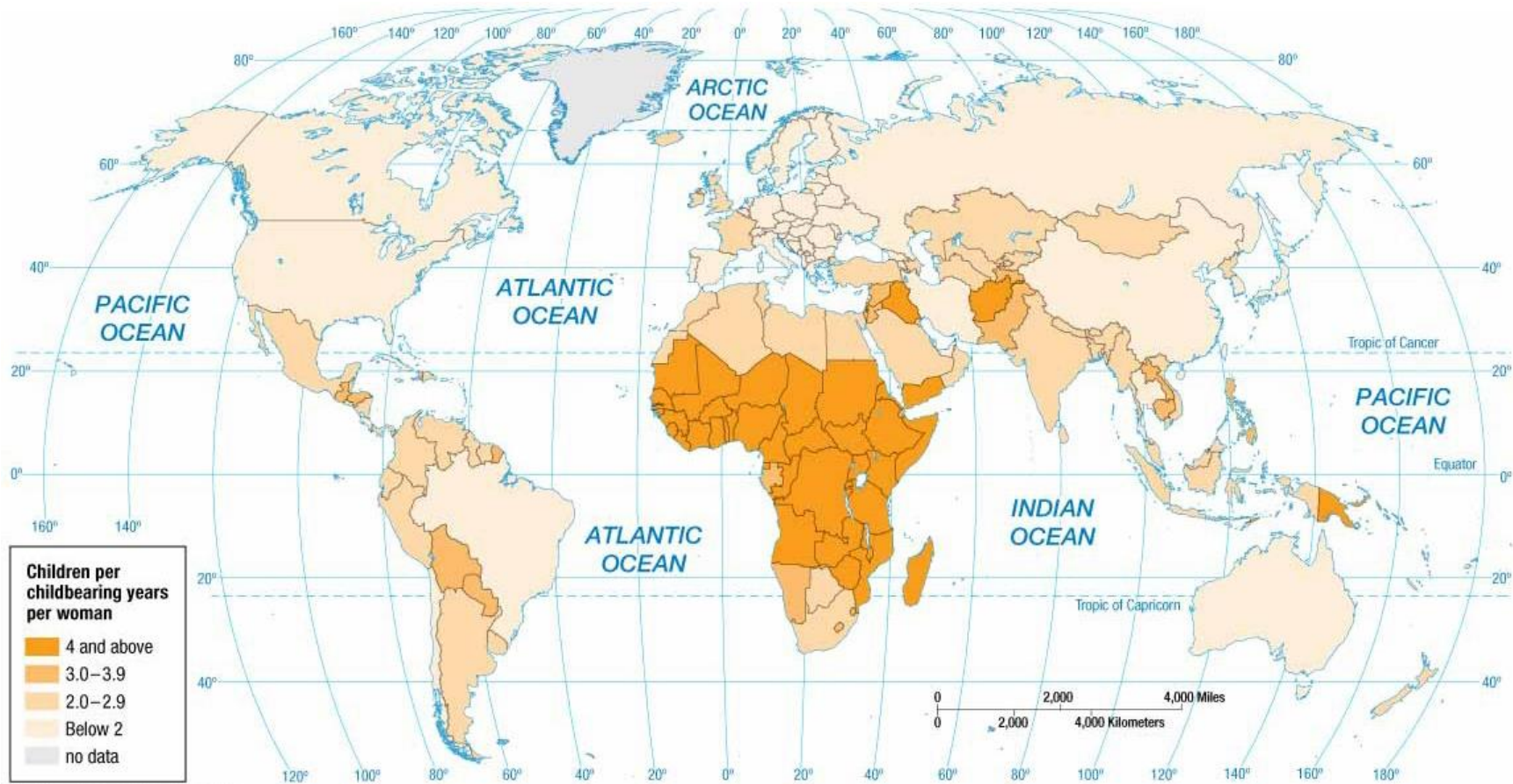
- Fertility

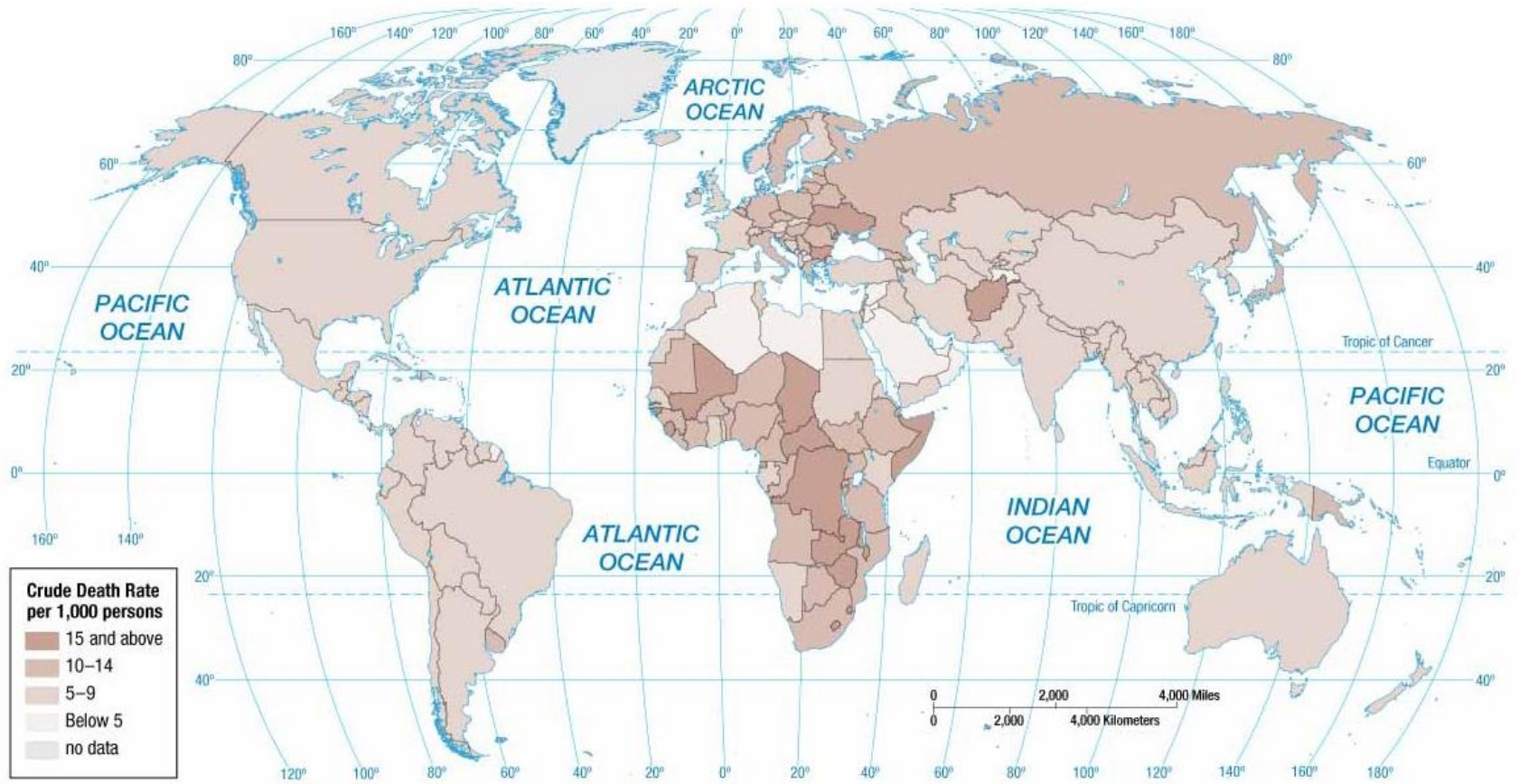
- *Total Fertility Rate (TFR)*

- Measure also used by geographers to measure number of births in a society.
      - Defined as the average number of children a woman will have throughout her childbearing years (15–49)
      - TFR for world is 2.5.
      - TFR exceeds 5 in sub-Saharan Africa, while 2 or less in nearly all European countries.



[http://www.ted.com/talks/hans\\_rosling\\_religions\\_and\\_babies](http://www.ted.com/talks/hans_rosling_religions_and_babies)





# Why Is Global Population Increasing?

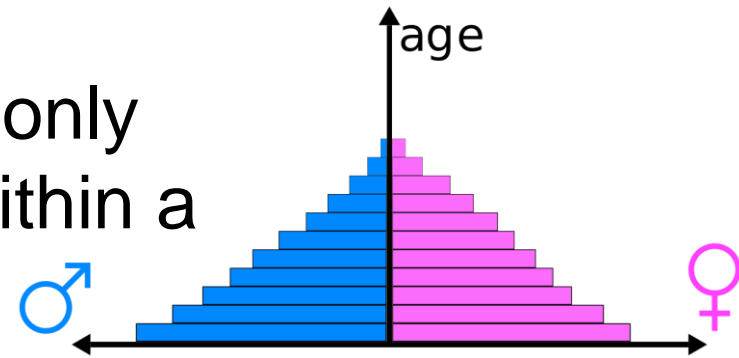
- Summary of Spatial Patterns
  - Developed Countries
    - Lower rates of...
      - Natural increase
      - Crude birth
      - Total fertility
      - Infant mortality
  - Developing Countries
    - Higher rates of...
      - Natural increase
      - Crude birth
      - Total fertility
      - Infant mortality

# Why Is Global Population Increasing?

- Population Structure

- Fertility and mortality vary not only spatially but also temporally within a country.

- A special bar graph known as a *population pyramid* can visually display a country's distinctive population structure.



- X-axis

- Percent male displayed to the left of zero
      - Percent female displayed to the right of zero

- Y-axis

- Age cohorts typically grouped in 5-year intervals
      - Youngest displayed at bottom and oldest at top

# Why Is Global Population Increasing?

- Population Structure
  - Dependency Ratio
    - Defined as the number of people who are too young or too old to work, compared to the number of people in their productive years.
      - People aged 0 to 14 and over 65 years old are considered dependents.
      - Larger dependency ratios imply greater financial burden on the working class.
        - » 85 percent in sub-Saharan Africa, while 47 percent in Europe.



# Why Is Global Population Increasing?

- Population Structure
  - Sex Ratio
    - Defined as the number of males per 100 females in the population
      - Developed countries have more females than males, because they tend to live 7 years longer.

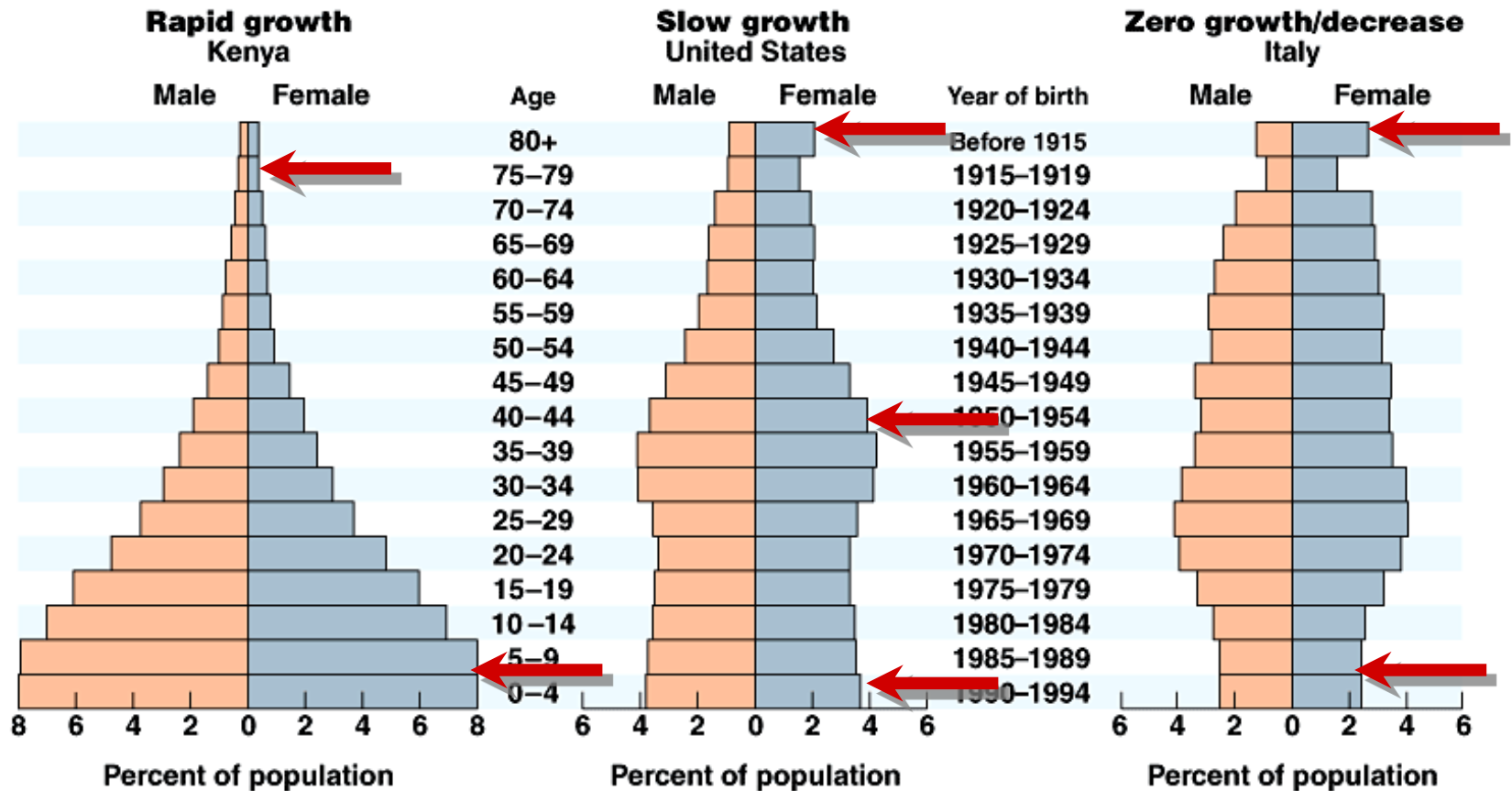
# Types of Population Policies

Pro-natalist / Expansive

Anti-natalist / Restrictive



# Population Pyramids



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