

# Rapid Growth in Cape Verde

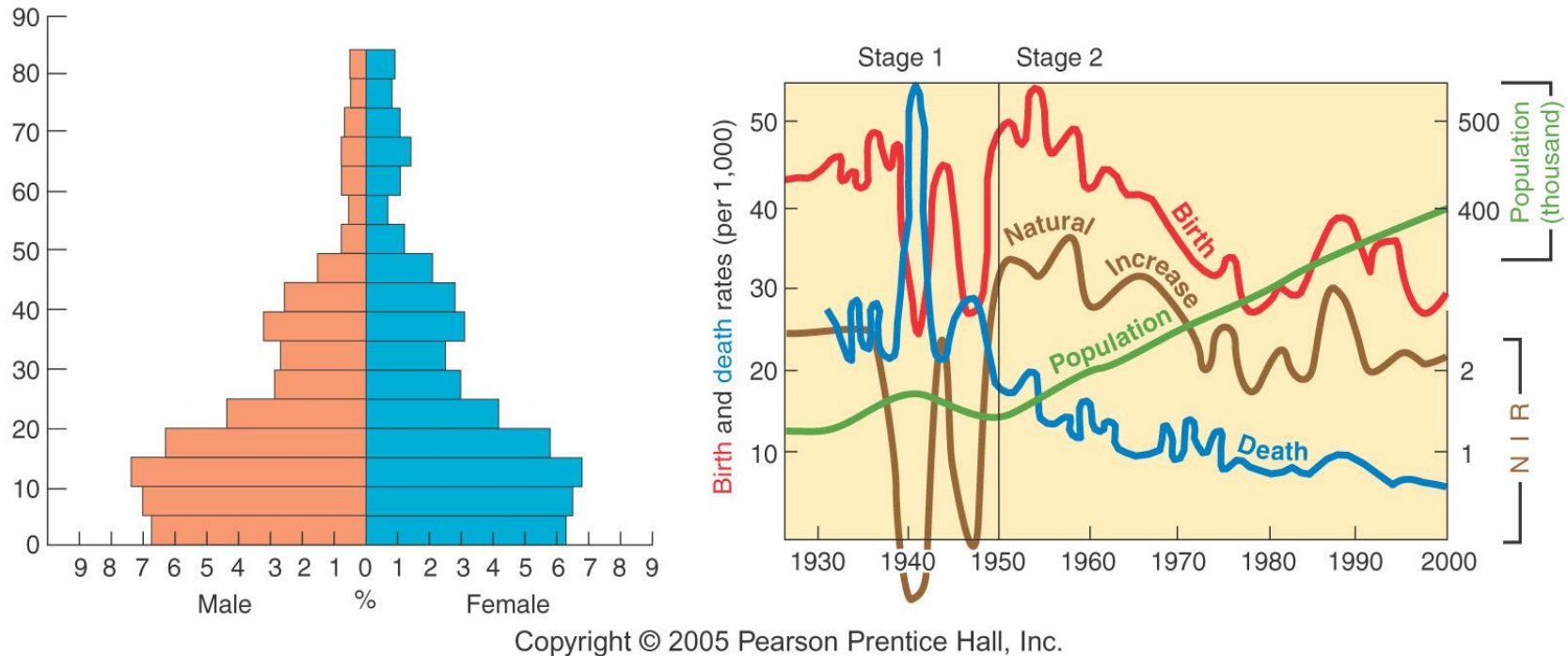
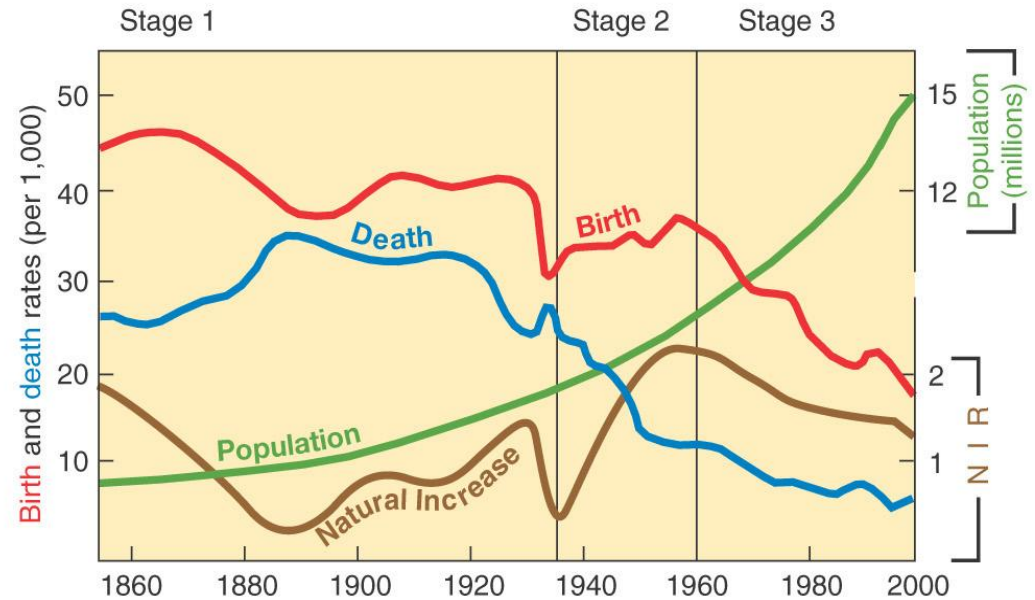
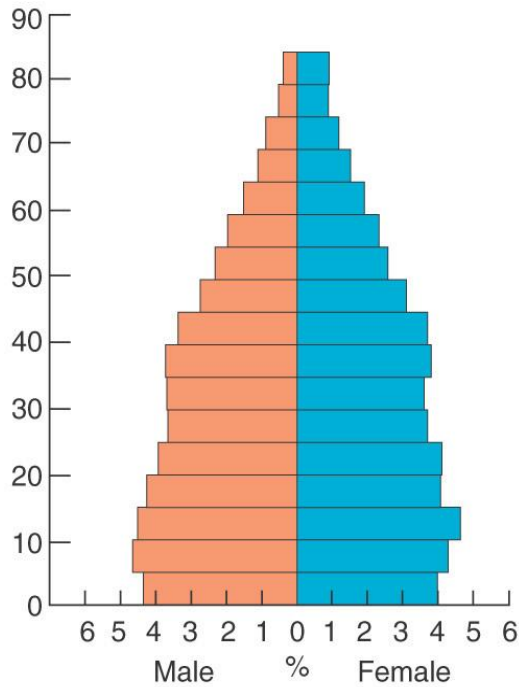


Fig. 2-17: Cape Verde, which entered stage 2 of the demographic transition in about 1950, is experiencing rapid population growth. Its population history reflects the impacts of famines and out-migration.

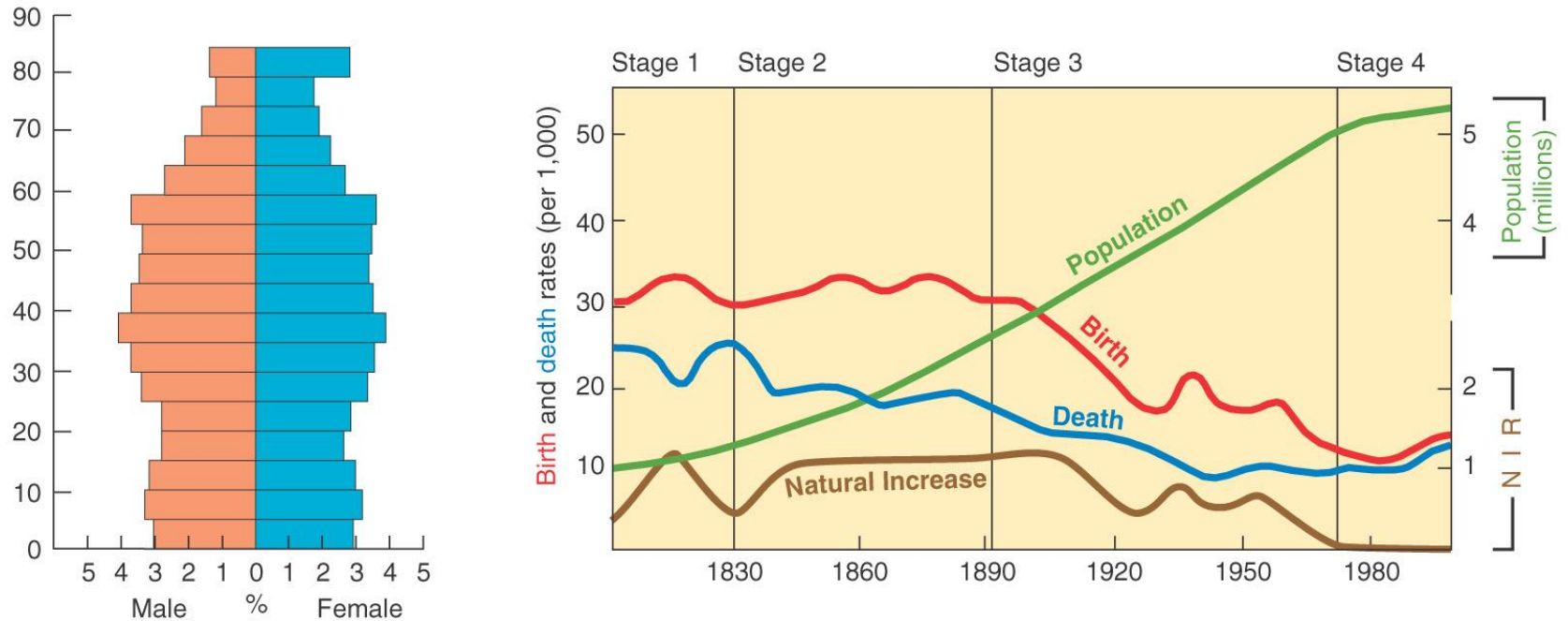
# Moderate Growth in Chile



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Fig. 2-18: Chile entered stage 2 of the demographic transition in the 1930s, and it entered stage 3 in the 1960s.

# Low Growth in Denmark



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Fig. 2-19: Denmark has been in stage 4 of the demographic transition since the 1970s, with little population growth since then. Its population pyramid shows increasing numbers of elderly and few children.

# Demographic Transition and World Population Growth

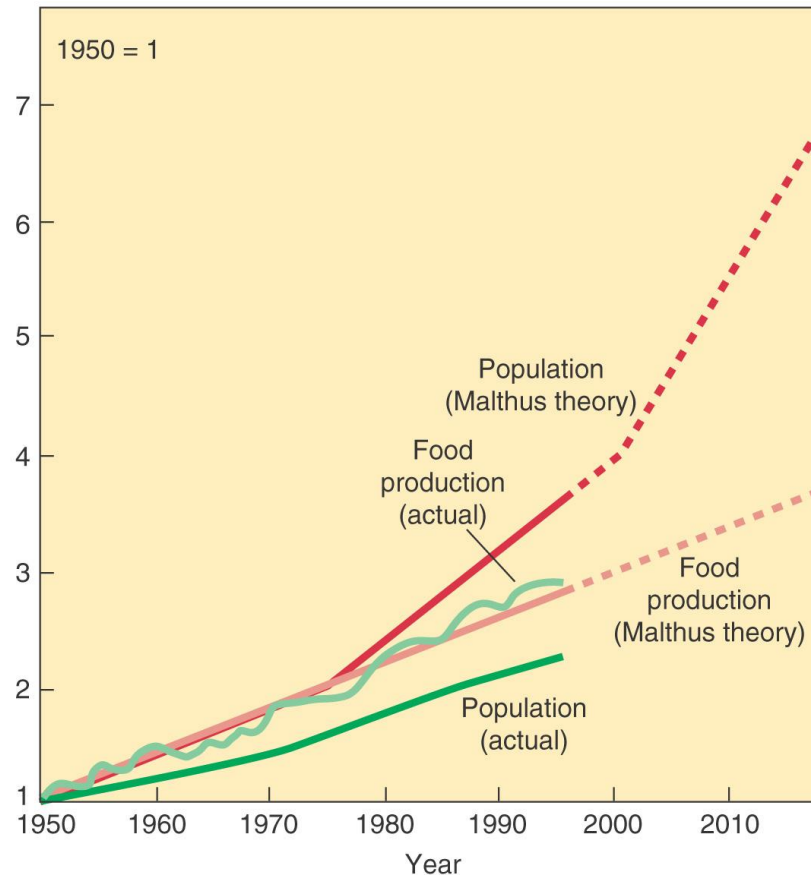
- The Worldwide population increased rapidly during the second half of the twentieth century.
- The four- stage demographic transition is characterized by two big breaks with the past.
  - The first break—the sudden drop in the death rate—has been accomplished everywhere.
  - The second break—the sudden drop in the birth rate—has yet to be achieved in many countries.
- The nineteenth-century decline in the CDR in Europe and North America took place in conjunction with the Industrial Revolution.
- In contrast, the sudden drop in the CDR in Africa, Asia, and Latin America in the twentieth century was accomplished by different means and with less internal effort by local citizens.
- Medical technology was injected from Europe and North America instead of arising within the country as part of an economic revolution.
- In the past, stage 2 lasted for approximately 100 years in Europe and North America, but today's stage 2 countries are being asked to move through to stage 3 in much less time in order to curtail population growth.

# Key Issue 4: Will the World Face an Overpopulation Problem?

- The Main Points of this issue are:
  - Malthus on overpopulation
    - *Population growth and food supply*
    - *Malthus' critics*
  - Declining birth rates
    - *Malthus theory and reality*
    - *Reasons for declining birth rates*
  - World health threats
    - *Epidemiological transitions*

# Food and Population, 1950-2000

## *Malthus vs. Actual Trends*



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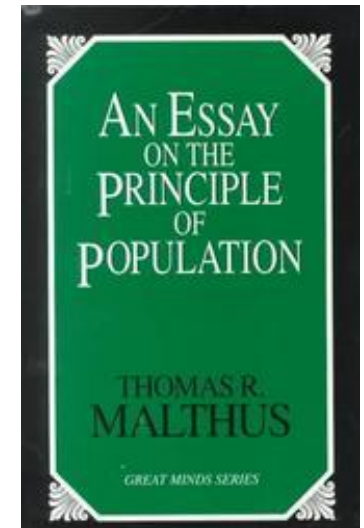


Fig. 2-20: Malthus predicted population would grow faster than food production, but food production actually expanded faster than population in the second half of the twentieth century.

# Neo-Malthusians

- Contemporary geographers and other analysts are taking another look at Malthus's theory, because of the unprecedented rate of natural increase in LDCs.
- Neo-Malthusians paint a frightening picture of a world in which billions of people are engaged in a desperate search for food and fuel.
- Many LDCs have expanded their food production significantly in recent years, but they have more poor people than ever before.



# Malthus's Critics

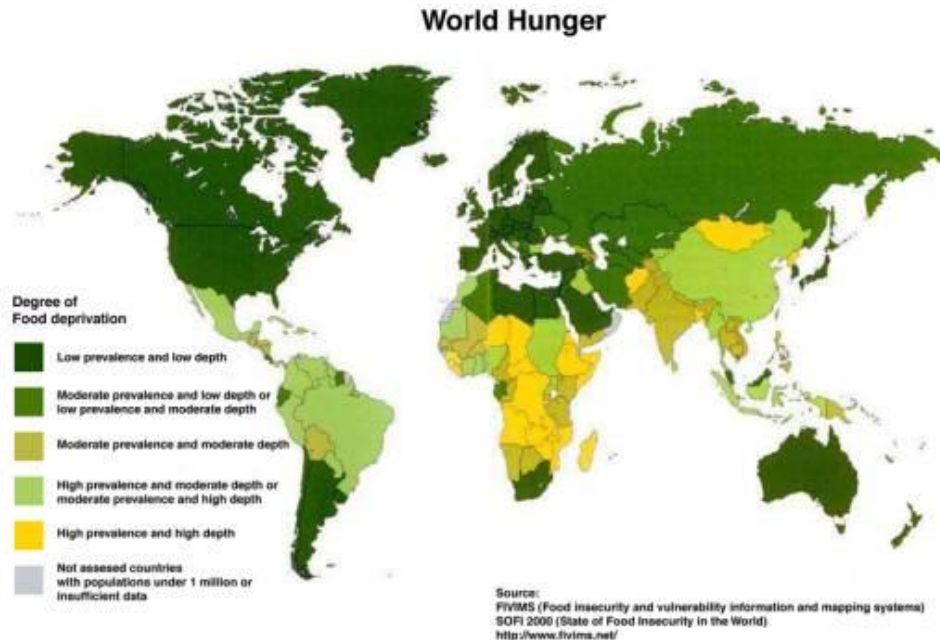
- Criticism has been leveled at both the population growth and resource depletion sides of Malthus's equation.
- Contemporary analysts such as Esther Boserup and Julian Simon (argue that) a larger population could stimulate economic growth and therefore the production of more food.
- The Marxist theorist Friedrich Engels dismissed Malthus's arithmetic as an artifact of capitalism. Engels argued that the world possessed sufficient resources to eliminate global hunger and poverty, if only these resources were shared equally.



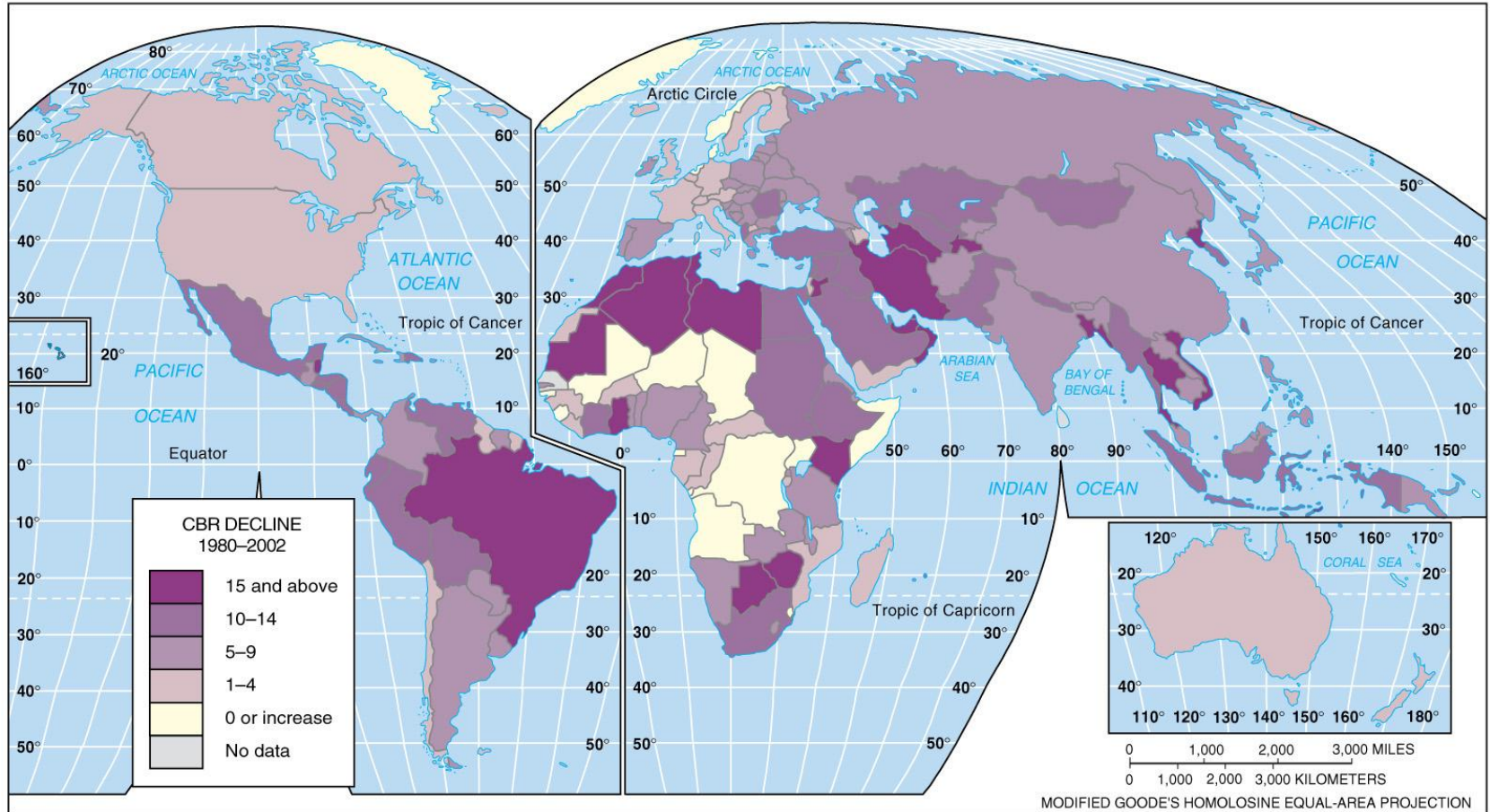


# Malthus Theory and Reality

- Vaclav Smil has shown that Malthus was fairly close to the mark on food production but much too pessimistic on population growth.
- Many people in the world cannot afford to buy food or do not have access to sources of food, but these are problems of distribution of wealth rather than insufficient global production of food, as Malthus theorized.



# Crude Birth Rate Decline, 1981–2001



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Fig. 2-21: Crude birth rates declined in most countries between 1981 and 2001 (though the absolute number of births per year increased from 123 to 133 million).

# Reducing Birth Rates

- Two strategies have been successful in reducing birth rates.
  - One alternative emphasizes reliance on economic development.
  - The other on distribution of contraceptives.



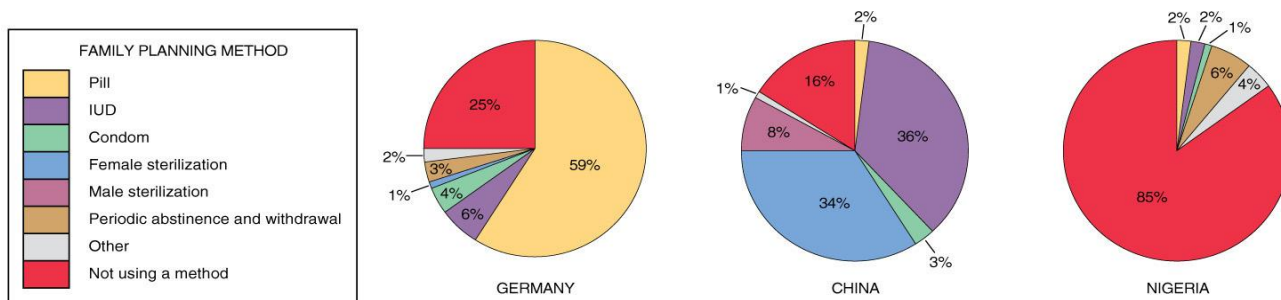
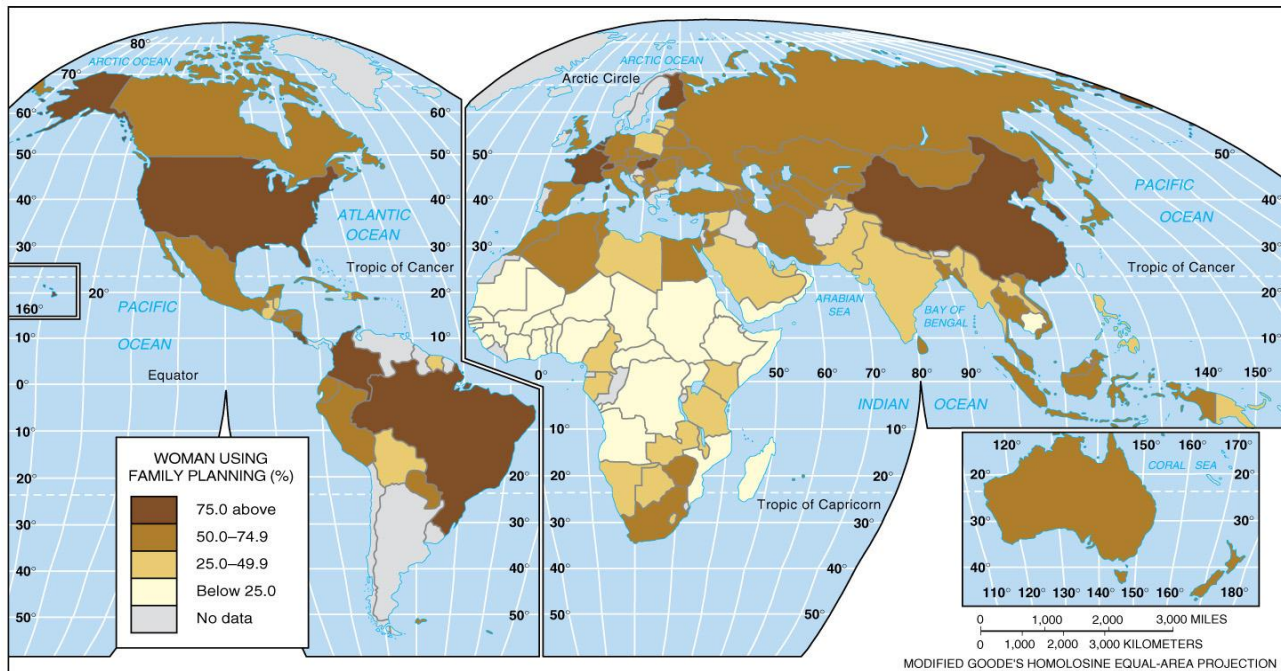
# Economic Development

- One approach emphasizes improving local economic conditions.
- If more women are able to attend school, they learn employment skills, gain more economic control of their lives, and make more informed reproductive choices.
- With the survival of more infants assured, women would be more likely to choose contraceptives to limit the number of children.





# Use of Family Planning

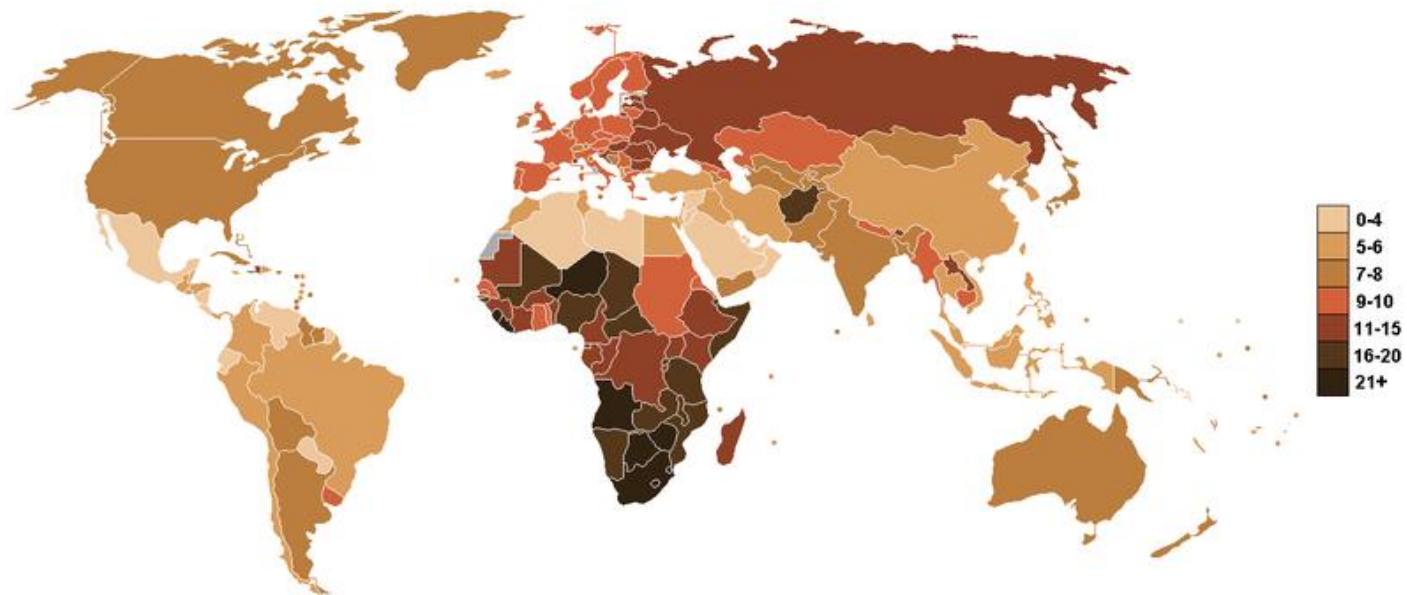


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Fig. 2-22: Both the extent of family planning use and the methods used vary widely by country and culture.

# World Health Threats

- Lower crude birth rates have been responsible for declining natural increase rates in most countries.
- However, in some countries of sub-Saharan Africa lower natural increase rates have also resulted from higher crude death rates, especially through the diffusion of AIDS.
- Medical researchers have identified an epidemiologic transition that focuses on distinctive causes of death in each stage of the demographic transition.



Death rate (deaths/1,000 population)

# Epidemiologic Transition Stages 1 and 2

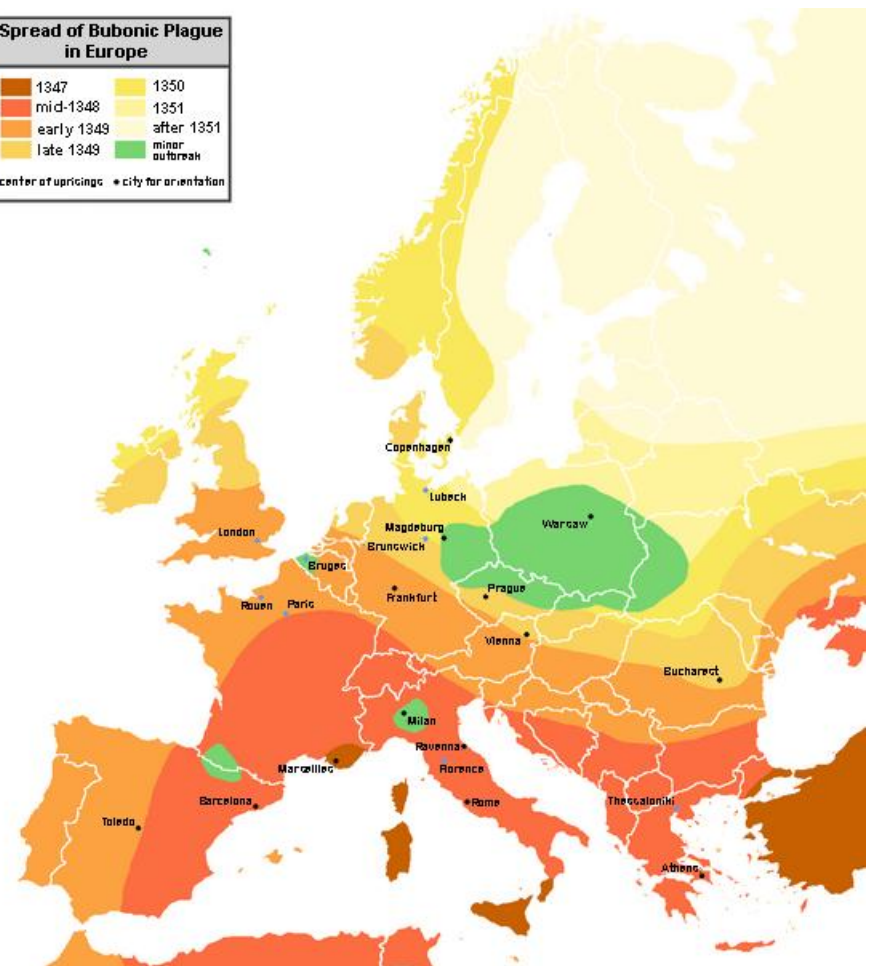
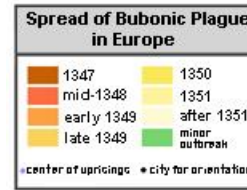
- Stage 1 of the epidemiologic transition, as originally formulated by epidemiologist Abdel Omran in 1971, has been called the stage of pestilence and famine.
  - Infectious and parasitic diseases were principal causes of human deaths.
- Stage 2 of the epidemiologic transition has been called the stage of receding pandemics. A pandemic is disease that occurs over a wide geographic area and affects a very high proportion of the population.





# The Black Plague

- The Black Plague, or bubonic plague, originated in present-day Kyrgyzstan and was brought from there by a Tatar army when it attacked an Italian trading post on the Black Sea.
- About 25 million Europeans died between 1347 and 1350, at least one-half of the continent's population.
- Five other epidemics in the late fourteenth century added to the toll in Europe.
- In China, 13 million died from the plague in 1380.



# Cholera in London, 1854

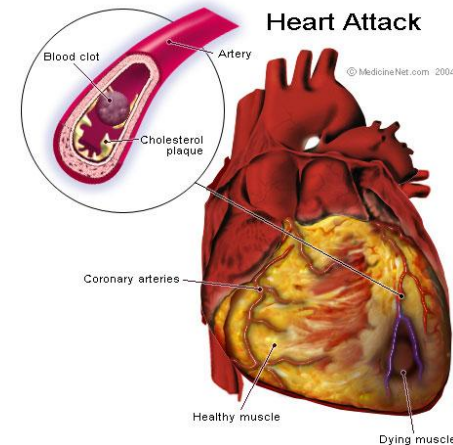


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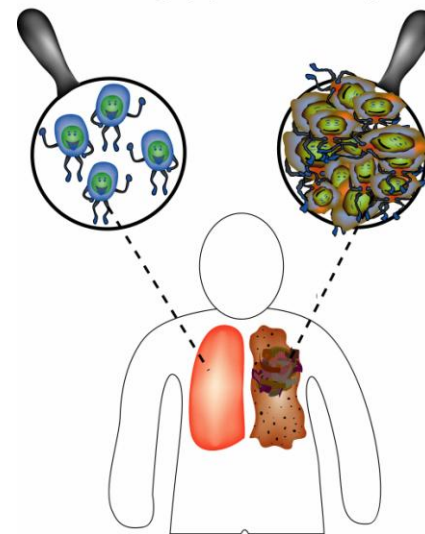
Fig. 2-23: By mapping the distribution of cholera cases and water pumps in Soho, London, Dr. John Snow identified the source of the waterborne epidemic.

# Epidemiologic Transition Stages 3 and 4

- Stage 3 of the epidemiologic transition, the stage of degenerative and human-created diseases, is characterized by a decrease in deaths from infectious diseases and an increase in chronic disorders associated with aging.
  - The two especially important chronic disorders in stage 3 are cardiovascular diseases, such as heart attacks, and various forms of cancer.
- Omran's epidemiologic transition was extended by S.Jay Olshansky and Brian Ault to stage 4, the stage of delayed degenerative diseases.
  - The major degenerative causes of death—cardiovascular diseases and cancers—linger, but the life expectancy of older people is extended through medical advances.



**Cancer = cells that grow out of control and clog up parts of the body**



# Epidemiologic Transition Possible

## Stage 5

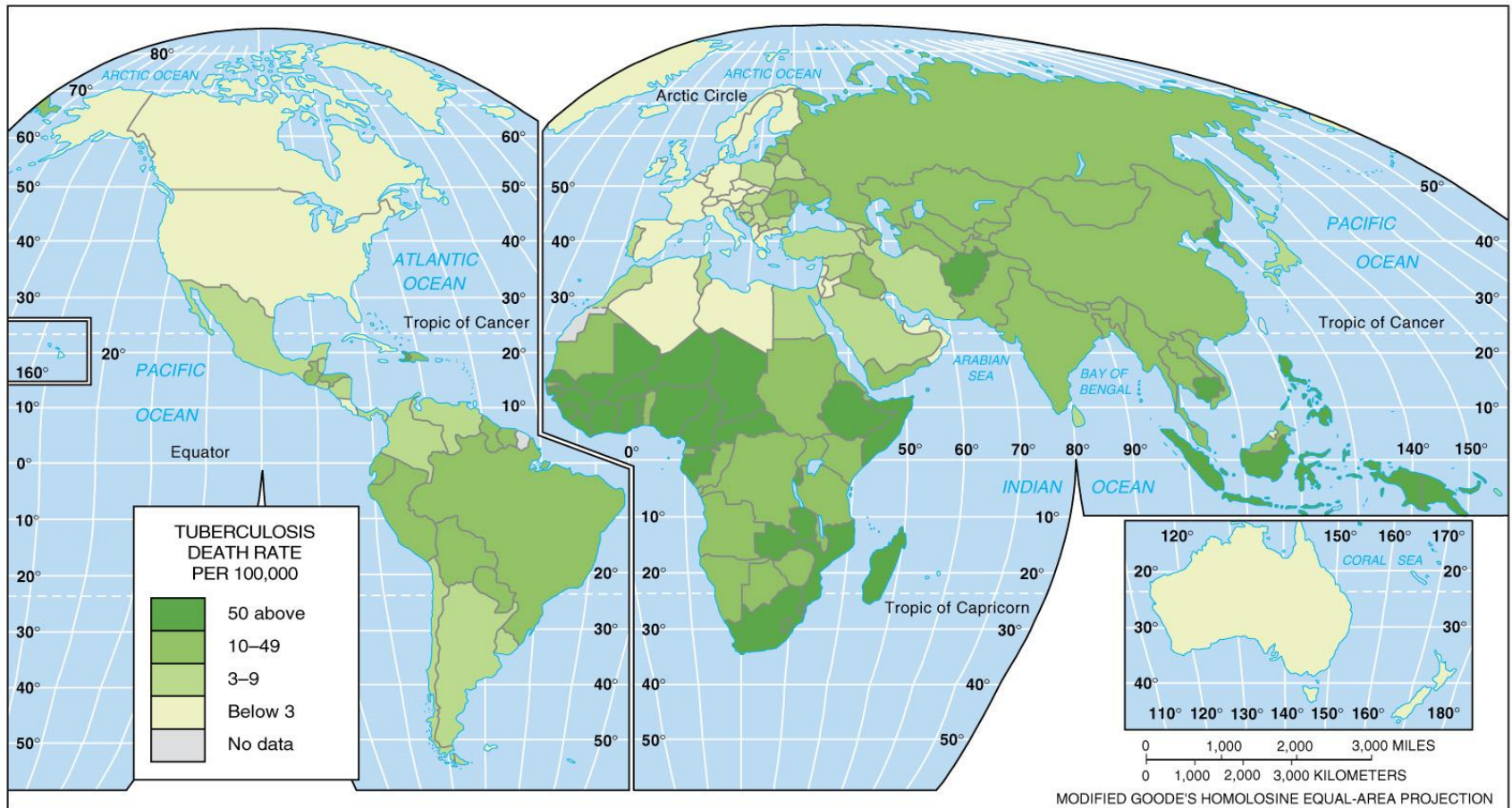
- Some medical analysts argue that the world is moving into stage 5 of the epidemiologic transition, the stage of reemergence of infectious and parasitic diseases.
- Infectious diseases thought to have been eradicated or controlled have returned, and new ones have emerged.



# Reasons for Stage 5

- Three reasons help to explain the possible emergence of a stage 5 of the epidemiologic transition.
  - One is evolution:
    - Infectious disease microbes have continuously evolved and changed in response to environmental pressures by developing resistance to drugs.
    - Malaria was nearly eradicated in the mid-twentieth century by spraying DDT in areas infested with the mosquito that carried the parasite.
    - The disease returned after 1963, however, and now causes more than 2 million deaths worldwide.
    - The reason was the evolution of DDT-resistant mosquitoes.
  - A second reason for continued epidemics is poverty.
  - The third factor in the reemergence of epidemics is improved travel.
    - As they travel, people carry diseases with them and are exposed to the diseases of others.

# Tuberculosis Death Rates, 2000



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Fig. 2-24: The tuberculosis death rate is a good indicator of a country's ability to invest in health care. TB is still one of the world's largest infectious-disease killers.

# SARS Infections in China, 2003



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Fig. 2-25: China had 85 percent of the world's SARS cases in 2003. Within China, the infection was highly clustered in Guangdong Province, Hong Kong, and Beijing.

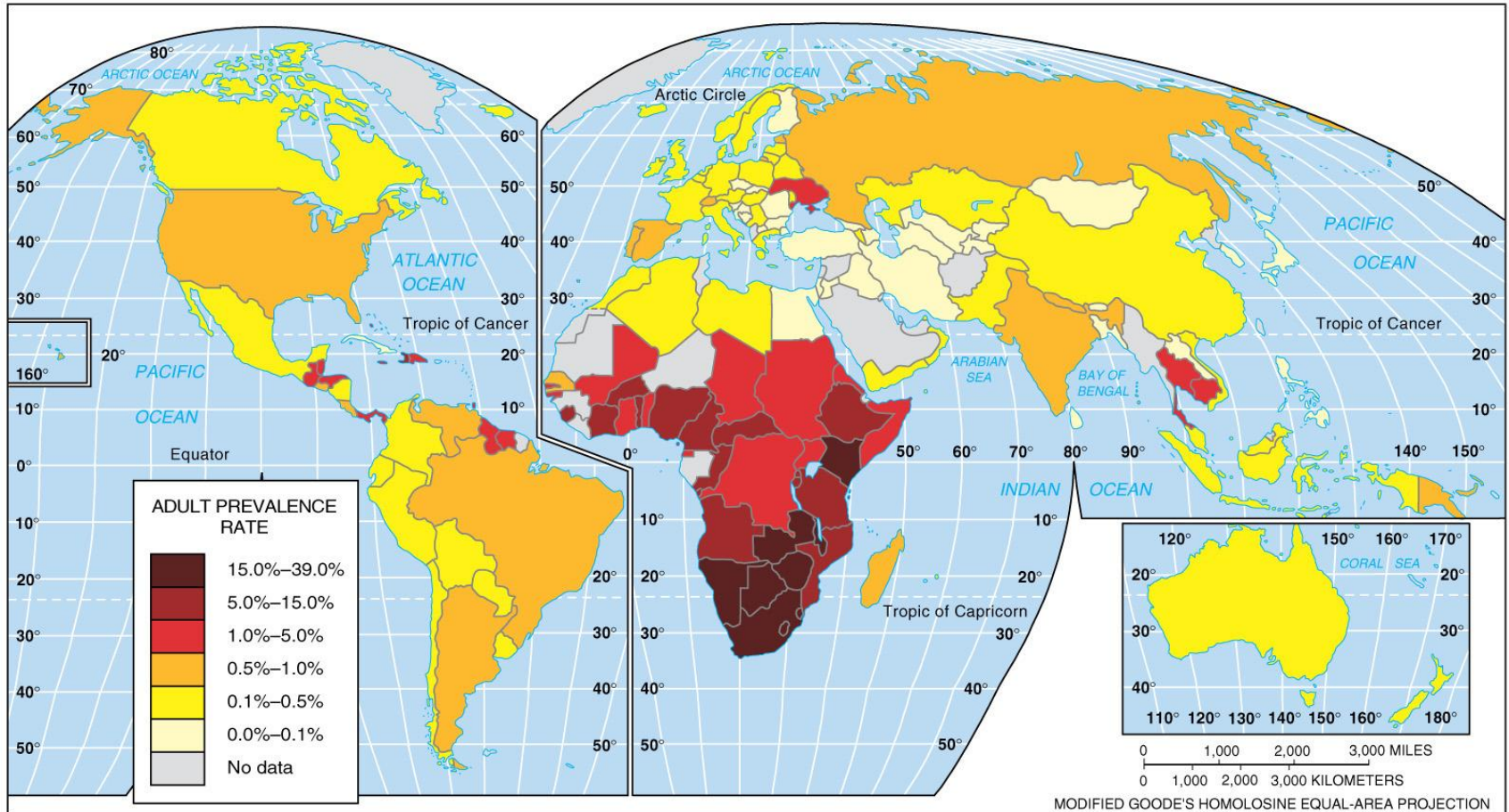
# Bio-Terrorism

- Some fear that terrorists may also be responsible for spreading infectious diseases.
- After September 11, U.S. government officials urged health care and other emergency response workers to be immunized against smallpox, because terrorists were thought to have access to samples of the disease that remained for medical research.





# HIV/AIDS Prevalence Rates, 2002

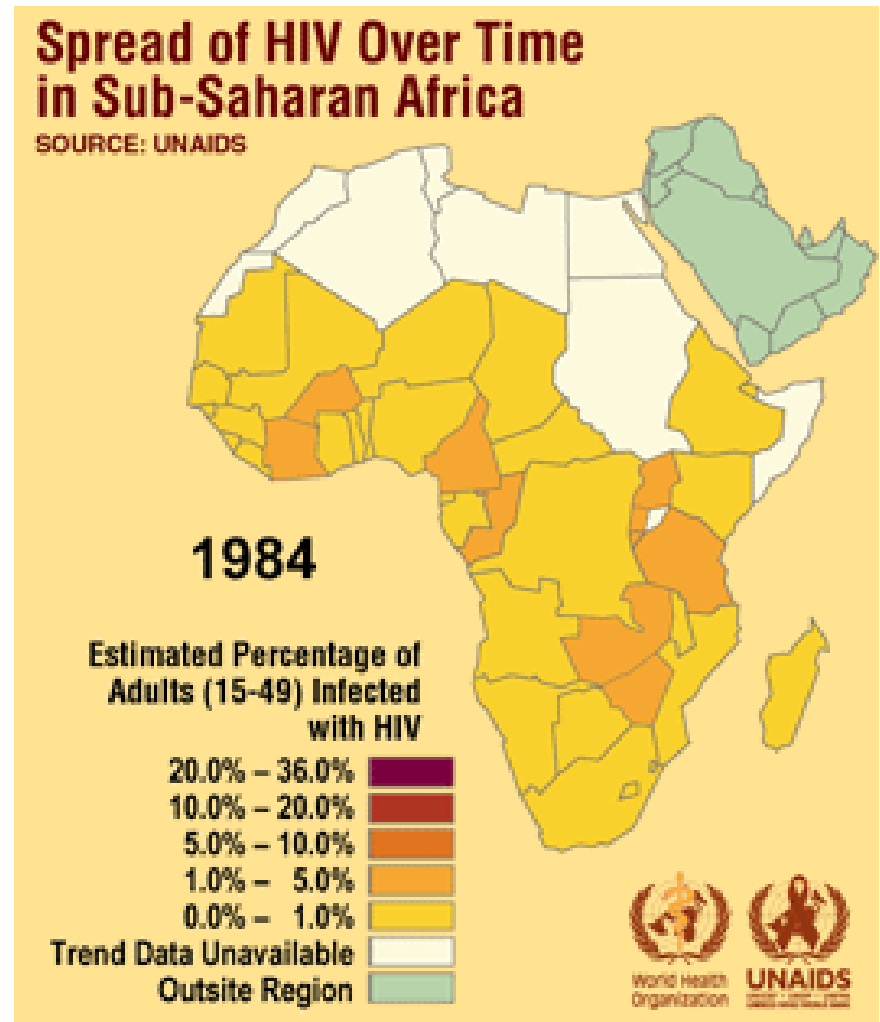


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Fig. 2-26: The highest HIV infection rates are in sub-Saharan Africa. India and China have large numbers of cases, but lower infection rates at present.

# AIDS in Africa

- Crude death rates in many sub-Saharan Africa countries rose sharply during the 1990s as a result of AIDS, from the mid-teens to the low twenties.
- The populations of Botswana and South Africa are forecast to decline between now and 2050 as a result of AIDS.



# Chapter 2

# Population

The End