

of the national services and manufacturing sectors and are where many leaders of the public and private sectors live. They also contain extensive areas of poverty and slum conditions, as discussed in Chapter 13.

Pause and Reflect 9.1.4:

Russia and Canada are the world's two largest countries in land area. Which of these two countries would you expect to have regional internal variations similar to those in the United States, and which would have regional internal variations similar to those in Brazil, China, and Mexico?

CHECK-IN: KEY ISSUE 1

Why Does Development Vary among Countries?

- ✓ The Human Development Index (HDI) measures the level of development of each country.
- ✓ HDI is based on three factors: a decent standard of living, a long and healthy life, and access to knowledge.

CONTEMPORARY GEOGRAPHIC TOOLS

Collecting and Depicting Development Data

This chapter includes two dozen world maps that show a wide variety of development indicators. The concept of development involves many economic, social, and demographic dimensions.

Obtaining timely and accurate data related to development for nearly 200 countries is challenging. The data for most of the maps of world development in this chapter come from two sources:

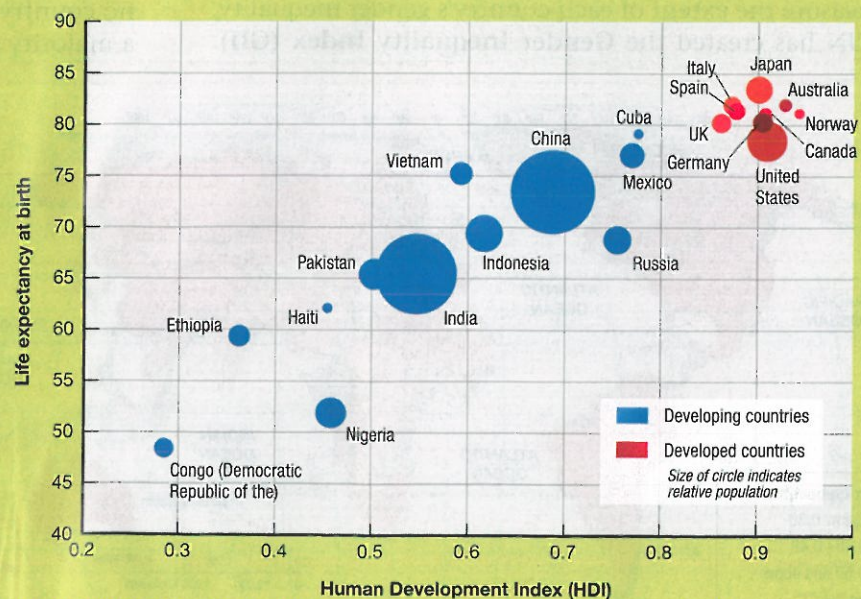
- The United Nations Development Programme prepares the annual Human Development Report and provides much of the data contained in the report at hdr.undp.org.
- The World Bank pulls together hundreds of measures of development from a variety of sources and makes them available at data.worldbank.org.

These data can be used to depict patterns of similarities and differences among countries. For example, Figure 9-10 shows that in general, life expectancy is higher in developed countries than in developing countries. Figure 9-16 shows the same data on a graph. Each country is represented by a circle. The more populous the country,

the larger the circle. The y-axis shows life expectancy, and the x-axis shows HDI level. The very high developed countries are in red, and the high, medium, and low developing countries are in yellow, green, and blue, respectively. The arc of the circles from lower left to upper right shows that countries with high HDIs have longer life expectancies.

Figure 9-16 helps to illustrate exceptions to the pattern. Circles

that are way off to the bottom have life expectancies that are less than expected by their HDI. Most of the countries with lower-than-expected life expectancy are in sub-Saharan Africa. What might explain the low figures in sub-Saharan Africa? Refer to Figure 2-37, the world map of AIDS; most of the countries with the highest rates of AIDS are in sub-Saharan Africa.



▲ FIGURE 9-16 LIFE EXPECTANCY GRAPH The higher the HDI, the longer the life expectancy.

KEY ISSUE 2

Why Does Development Vary by Gender?

- Gender Inequality Measures
- Gender Inequality Trends

Learning Outcome 9.2.1

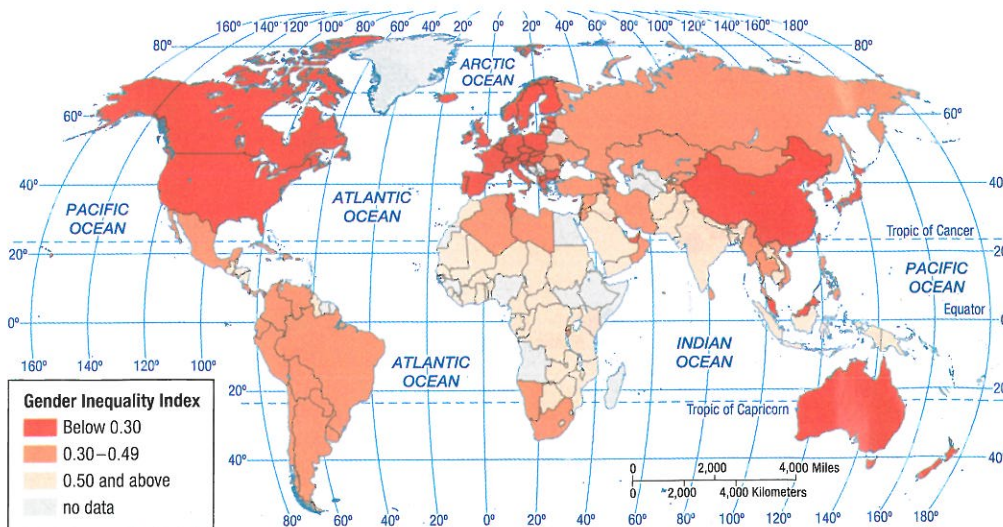
Describe the UN's measures of gender inequality.

A country's overall level of development can mask inequalities in the status of men and women. The quest for an improved standard of living, access to knowledge, health, and a sustainable future are aspirations of people in all countries. Yet long-standing cultural and legal obstacles can limit women's participation in development and access to its benefits.

The UN has not found a single country in the world where the women are treated as well as the men. At best, women have achieved near-equality with men in some countries, but in other countries, the level of development for women lags far behind the level for men. The UN argues that inequality between men and women is a major factor that keeps a country from achieving a higher level of development.

Gender Inequality Measures

To measure the extent of each country's gender inequality, the UN has created the **Gender Inequality Index (GII)**.



▲ **FIGURE 9-17 GENDER INEQUALITY INDEX (GII)** The lowest GII numbers and therefore the least inequality are in Europe, and the highest numbers are in sub-Saharan Africa.

As with the other indices, the GII combines multiple measures, including empowerment, labor, and reproductive health. The GII replaces other gender-related development measures formerly used by the UN, including the Gender-related Development Index and the Gender Empowerment Measure.

The higher the GII, the greater the inequality between men and women (Figure 9-17). A score of 0 would mean that men and women fare equally, and a score of 1.0 would mean that women fare as poorly as possible in all measures.

The GII is higher in developing countries than in developed ones. Sub-Saharan Africa, South Asia, Central Asia, and Southwest Asia are the developing regions with the highest levels of gender inequality. Reproductive health is the largest contributor to gender inequality in these regions. South and Southwest Asia also have relatively poor female empowerment scores. At the other extreme, 10 countries in Europe have GIIs less than 0.1, meaning that men and women are nearly equal. In general, countries with high HDIs have low GIIs and vice versa.

EMPOWERMENT

In the context of gender inequality, empowerment refers to the ability of women to achieve improvements in their own status—that is, to achieve economic and political power. The empowerment dimension of GII is measured by two indicators:

- **The percentage of seats held by women in the national legislature.** No particular gender-specific skills are required to be elected as a representative and to serve effectively. But in every country of the world, both developed and developing, fewer women than men hold positions of political power (Figure 9-18). Although more women than men vote in most places, no country has a national parliament or congress with a majority of women. The highest percentages are in

Europe, where women comprise approximately one-fourth of the members of national parliaments. In the United States, one-sixth of the members of the U.S. Senate and House of Representatives are women, a figure that is below the numbers in many developing regions. The lowest rates are in Southwest Asia and North Africa.

- **The percentage of women who have completed high school.** In North America, girls are more likely than boys to complete high school, and boys are slightly ahead in Europe. In developing countries, boys are much more likely than girls to

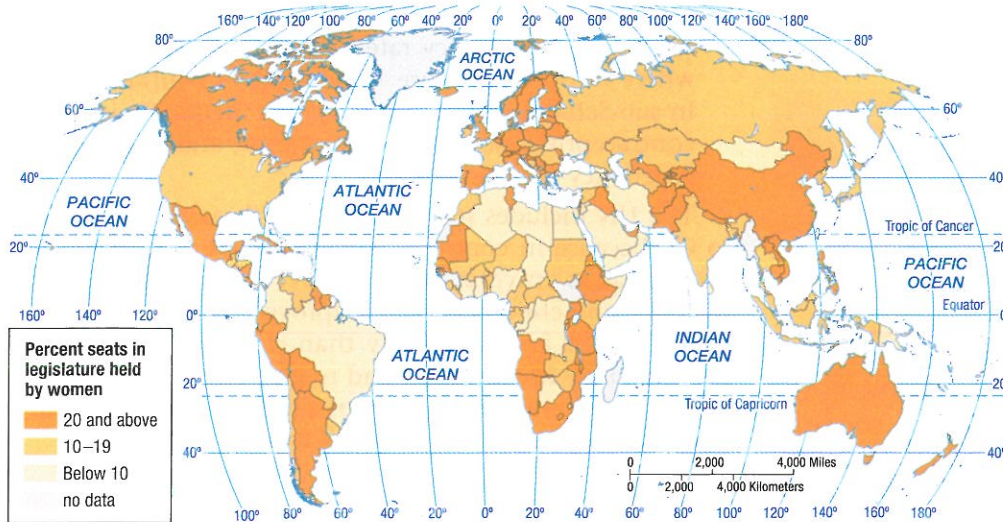
be high school graduates. For every 10 boys who graduate from high school in developing countries, only 8 girls graduate. In South Asia, for every 10 male high school graduates, there are only 5 females (Figure 9-19).

Pause and Reflect 9.2.1

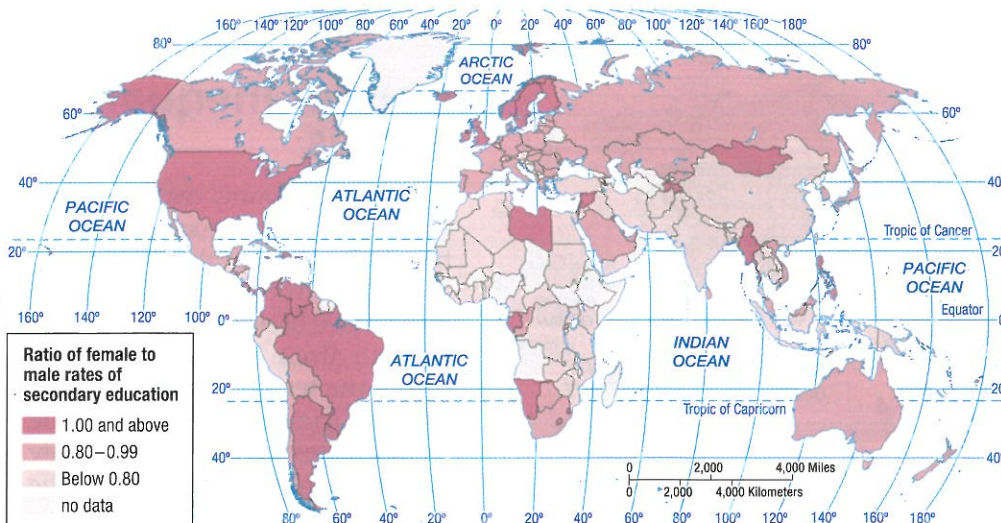
Can you name a major political leader in your community or in another country who is a woman?

LABOR FORCE

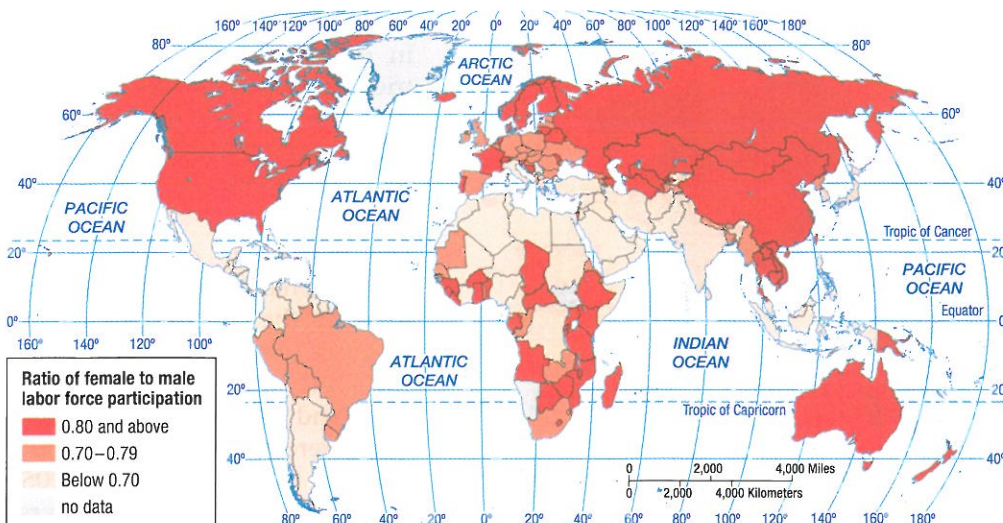
The **female labor force participation rate** is the percentage of women holding full-time jobs outside the home. In general, women in developed countries are more likely than women in developing countries to hold full-time jobs outside the home (Figure 9-20). For every 100 men in the labor force, there are 75 women in the labor force in developed countries and 65 in developing countries. The lowest rates of female participation are in Southwest Asia & North Africa, where there are only 35 women for every 100 men in the labor force. However, in sub-Saharan Africa—the region with the lowest HDI—the ratio is the world's highest, with 77 women for every 100 men in the labor force. Women hold jobs in agriculture or services in sub-Saharan Africa, even while they have the world's highest fertility rates.



▲ FIGURE 9-18 EMPOWERMENT: WOMEN IN THE NATIONAL LEGISLATURE The highest numbers of women in national legislature are in Europe, and the lowest numbers are in Southwest Asia & North Africa.



▲ FIGURE 9-19 EMPOWERMENT: WOMEN GRADUATING FROM HIGH SCHOOL A figure above 1 means that more girls than boys graduate from high school.



◀ FIGURE 9-20 FEMALE LABOR FORCE PARTICIPATION A lower number means that relatively few women participate in the labor force.

REPRODUCTIVE HEALTH

Learning Outcome 9.2.2

Describe changes since the 1990s in gender inequality.

Poor reproductive health is a major contributor to gender inequality around the world. The reproductive health dimension is based on two indicators:

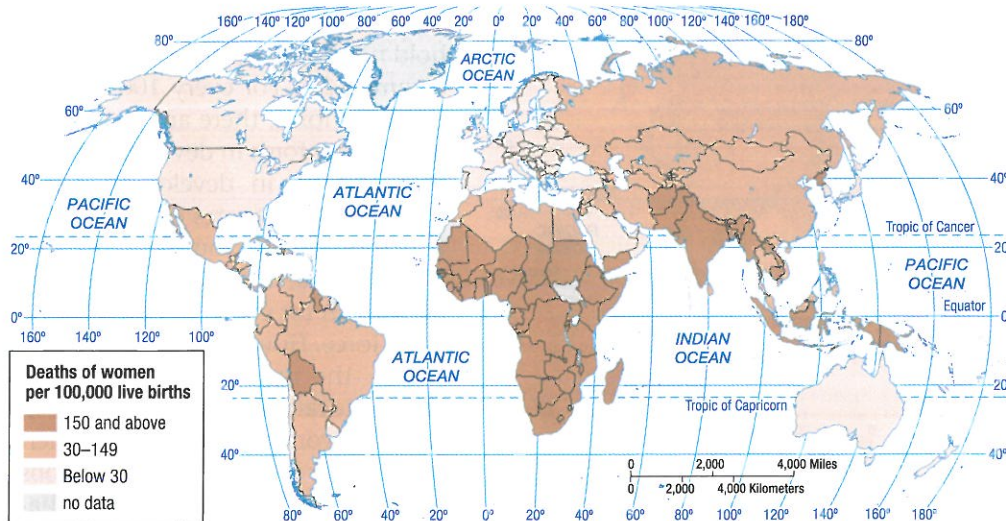
- The **maternal mortality ratio** is the number of women who die giving birth per 100,000 births. The ratio is 15 deaths of mothers per 100,000 live births in developed countries and 140 in developing countries (Figure 9-21). The highest rates (most deaths per births) are in sub-Saharan Africa. The UN estimates that 150,000 women and 1.6 million children die each year between the onset of labor and 48 hours after birth.
- The **adolescent fertility rate** is the number of births per 1,000 women ages 15 to 19 (Figure 9-22). The rate is 20 births per 1,000 women ages 15 to 19 in developed

countries and 60 in developing countries. The lowest teenage pregnancy rate is in Europe (8 per 1,000), where most couples use some form of contraception. In sub-Saharan Africa, where gender inequality is high, contraceptive use is below 10 percent, and the teenage pregnancy rate exceeds 100.

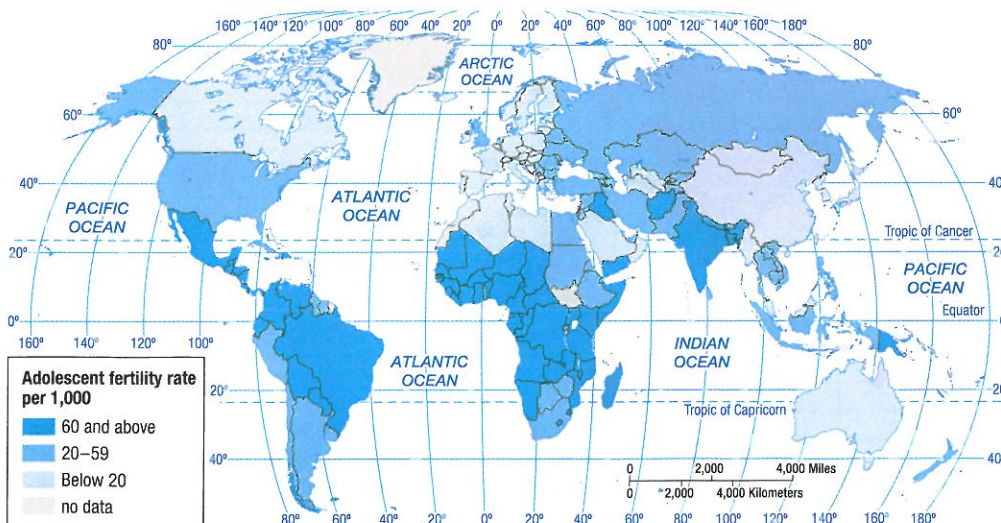
The UN includes reproductive health as a contributor to GII because in countries where effective control of reproduction is universal, women have fewer children, and maternal and child health are improved. Women in developing regions are more likely than women in developed regions to die in childbirth and to give birth as teenagers. Every country that offers women a full range of reproductive health options has a very low total fertility rate.

Pause and Reflect 9.2.2

The GII is 0.299 in the United States and 0.140 in Canada. Which country has greater gender inequality?



▲ **FIGURE 9-21 MATERNAL MORTALITY RATIO** The maternal mortality ratio is the number of deaths of mothers in childbirth compared to the number of live births.



▲ **FIGURE 9-22 ADOLESCENT FERTILITY RATE** The adolescent fertility rate is the number of births per women per 1,000 women ages 15 to 19.

Gender Inequality Trends

The UN has found that in nearly every country, gender inequality has declined since the 1990s (Figure 9-24). The greatest improvements have been in Southwest Asia & North Africa. The United States is one of the few countries where the GII has increased. Furthermore, the United States has a GII rank of only 47, although it ranks fourth on the HDI. The UN points to two factors accounting for the relatively low U.S. GII ranking:

- Reproductive rights are much lower in the United States than in other very high HDI countries. For example, the maternal mortality rate is 24 in the United States, compared to 12 in Canada and less than 10 throughout Europe.
- The percentage of women in the national legislature is much lower in the United States than in other high HDI countries. In the United States, 17 of 100 senators and 74 of 435 representatives were women in 2012. In Canada, for example, 36 of 105 senators and 76 of 307 members of parliament in the House of Commons were women in 2012.

SUSTAINABILITY AND INEQUALITY IN OUR GLOBAL VILLAGE

Gender Inequality and the Environment

According to the UN, gender inequality adversely affects the environment. Countries with less gender inequality (that is, relatively high GIIs) are more likely to:

- Ratify international environmental treaties.
- Take steps to reduce carbon dioxide emissions.
- Set aside protected land areas and reduce deforestation.
- Undertake recycling and water conservation.

The reasons for variations in environmental policies extend beyond gender inequality, but the UN concludes that if women are more likely to be elected, highly educated, and

in possession of reproductive rights, they are more likely to support and carry out environmental protection initiatives (Figure 9-23).

The attitudes of men and women toward the environment differ little in the world as a whole, according to a Gallup Poll. However, responses of men and women vary somewhat between the richest and poorest countries. In countries with the highest HDIs (and lowest GIIs), women are more likely than men to express concern for environmental issues, such as climate change and water and air quality, whereas men are more likely to express environmental concerns in countries with the lowest HDIs (and highest GIIs).

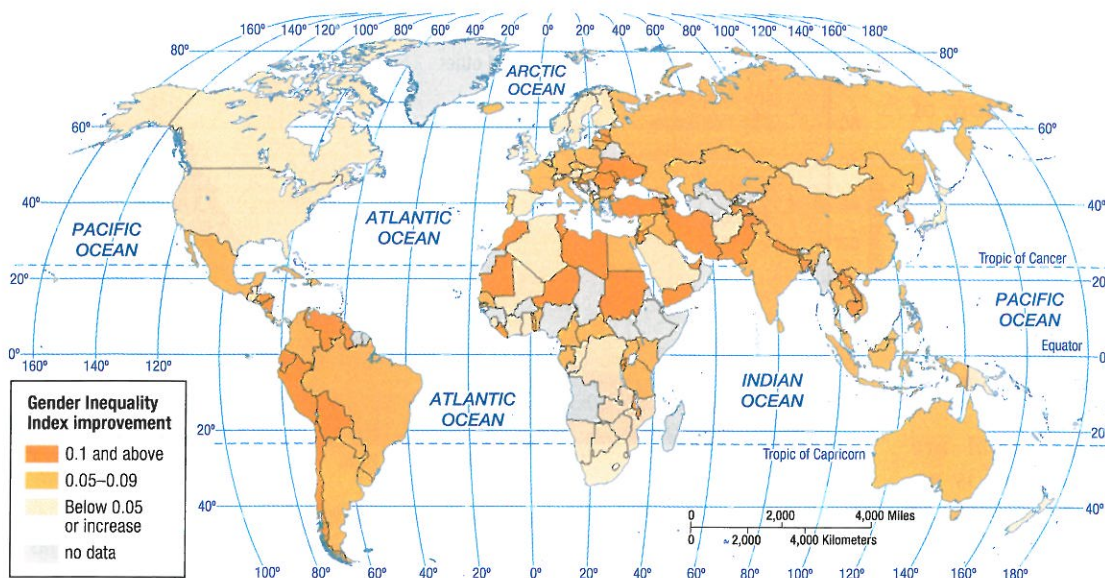


▲ **FIGURE 9-23 WOMEN AND ENVIRONMENTAL AWARENESS** A woman in the United Kingdom recycles bottles.

CHECK-IN: KEY ISSUE 2

Why Does Development Vary by Gender?

- ✓ **The Gender Inequality Index (GII) measures the extent of inequality between men and women in a country.**
- ✓ **GII is based on three factors: empowerment, labor force participation, and reproductive health.**



◀ **FIGURE 9-24 TRENDS IN GENDER INEQUALITY** The map shows the change in GI from the late 1990s to approximately 2010.

KEY ISSUE 3

Why Are Energy Resources Important for Development?

Learning Outcome 9.3.1

Explain the principal sources of demand for fossil fuels.

- Energy Supply and Demand
- Alternative Energy Sources

Development is based on availability of abundant low-cost energy. Developed countries use large quantities of energy to produce food, run factories, keep homes comfortable, and transport people and goods. Developing countries expect to use more energy to improve the lives of their citizens.

In Chapter 1, we distinguished between renewable resources (those produced in nature more rapidly than consumed by humans) and nonrenewable resources (those produced in nature more slowly than consumed by humans). Most of the energy resources used by humans are nonrenewable. In the long run, sustainable development will necessitate increased reliance on renewable energy.

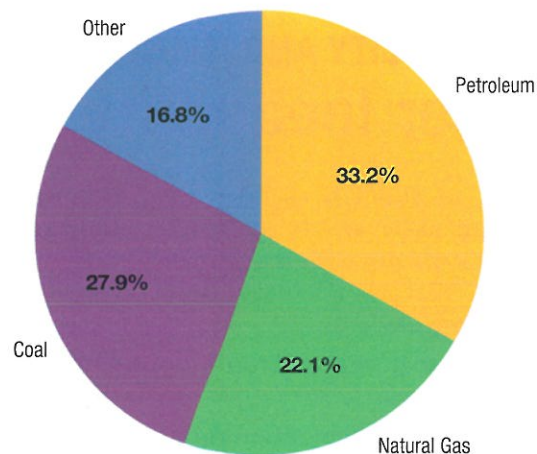
Energy Demand and Supply

Supply is the quantity of something that producers have available for sale. **Demand** is the quantity that consumers are willing and able to buy. Five-sixths of the world's energy needs are supplied by three of Earth's substances (Figure 9-25):

- **Coal.** Coal supplanted wood as the leading energy source in North America and Europe in the late 1800s, as these regions developed rapidly.
- **Petroleum.** Petroleum was first pumped in 1859 but did not become an important source of energy until the diffusion of motor vehicles in the twentieth century.
- **Natural gas.** Natural gas was originally burned off as a waste product of petroleum drilling, but it is now used to heat homes and to produce electricity.

In a developed country like the United States, dependency on these three sources of energy increased rapidly during the twentieth century (Figure 9-26).

Petroleum, natural gas, and coal are known as fossil fuels. A **fossil fuel** is an energy source formed from the residue of plants and animals buried millions of years ago. As sediment accumulated over these remains, intense pressure



▲ FIGURE 9-25 WORLD ENERGY DEMAND Petroleum, coal, and natural gas account for most of the world's energy consumption.

and chemical reactions slowly converted them into the fossil fuels that are currently used. When these substances are burned, energy that was stored in plants and animals millions of years ago is released.

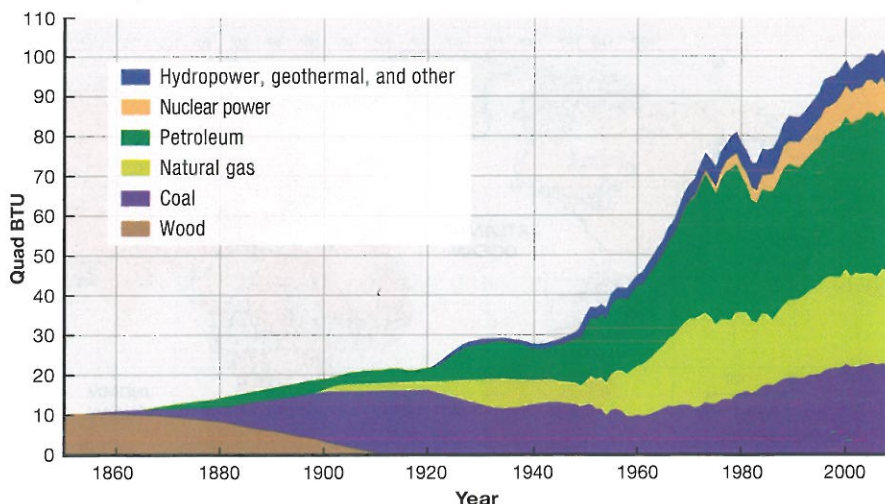
Geographers observe two important inequalities in the global distribution of fossil fuels:

- **Demand.** The heaviest consumers of fossil fuel are in developed countries, whereas most of the reserves are in developing countries.
- **Supply.** Some developing regions have abundant reserves, whereas others have little.

Given the centrality of fossil fuels in contemporary economy and culture, unequal consumption and reserves of fossil fuels have been major sources of instability between developed and developing countries.

Pause and Reflect 9.3.1

Which energy source increased most rapidly in the United States during the twentieth century?



▲ FIGURE 9-26 CHANGING U.S. ENERGY DEMAND Coal was the principal energy source in the nineteenth century. Petroleum and natural gas became important in the twentieth century.